HollyFrontier Corp
Form 10-K
February 21, 2018

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

FORM 10-K

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

For the fiscal year ended December 31, 2017
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 1-3876

HOLLYFRONTIER CORPORATION
(Exact name of registrant as specified in its charter)

| | |
|---|---|
| Delaware | 75-1056913 |
| (State or other jurisdiction of incorporation or organization) | (I.R.S. Employer Identification No.) |
| 2828 N. Harwood, Suite 1300<br>Dallas, Texas | 75201-1507 |
| (Address of principal executive offices) | (Zip Code) |

(214) 871-3555
Registrant’s telephone number, including area code

Securities registered pursuant to Section 12(b) of the Act:
Common Stock, $0.01 par value registered on the New York Stock Exchange.

Securities registered pursuant to 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 ý 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 ý
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 ý No ¨
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes ý No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨

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 ý Accelerated filer ¨ Non-accelerated filer ¨ Smaller reporting company ¨

Emerging growth company ¨

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

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

On June 30, 2017, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the Common Stock, par value $0.01 per share, held by non-affiliates of the registrant was approximately $4.5 billion, based upon the closing price on the New York Stock Exchange on such date. (This is not deemed an admission that any person whose shares were not included in the computation of the amount set forth in the preceding sentence necessarily is an "affiliate" of the registrant.)

177,363,228 shares of Common Stock, par value $.01 per share, were outstanding on February 16, 2018.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's proxy statement for its annual meeting of stockholders to be held on May 9, 2018, which proxy statement will be filed with the Securities and Exchange Commission within 120 days after December 31, 2017, are incorporated by reference in Part III.

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PART I

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10 K contains certain "forward-looking statements" within the meaning of the federal securities laws. All statements, other than statements of historical fact included in this Form 10-K, including, but not limited to, those under "Business and Properties" in Items 1 and 2, "Risk Factors" in Item 1A, "Legal Proceedings" in Item 3 and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7, are forward-looking statements. Forward-looking statements use words such as "anticipate," "project," "expect," "plan," "goal," "forecast," "intend," "should," "would," "could," "believe," "may," and similar expressions and statements regarding our plans objectives for future operations. These statements are based on management's beliefs and assumptions using currently available information and expectations as of the date hereof, are not guarantees of future performance and involve certain risks and uncertainties. All statements concerning our expectations for future results of operations are based on forecasts for our existing operations and do not include the potential impact of any future acquisitions. Although we believe that the expectations reflected in these forward-looking statements are reasonable, we cannot assure you that our expectations will prove to be correct. Therefore, actual outcomes and results could materially differ from what is expressed, implied or forecast in these statements. Any differences could be caused by a number of factors including, but not limited to:

- risks and uncertainties with respect to the actions of actual or potential competitive suppliers of refined petroleum products in our markets;
- the demand for and supply of crude oil and refined products;
- the spread between market prices for refined products and market prices for crude oil;
- the possibility of constraints on the transportation of refined products;
- the possibility of inefficiencies, curtailments or shutdowns in refinery operations or pipelines;
- effects of governmental and environmental regulations and policies;
- the availability and cost of our financing;
- the effectiveness of our capital investments and marketing strategies;
- our efficiency in carrying out construction projects;
- our ability to acquire refined product operations or pipeline and terminal operations on acceptable terms and to integrate any existing or future acquired operations;
- the possibility of terrorist attacks and the consequences of any such attacks;
- general economic conditions; and
- other financial, operational and legal risks and uncertainties detailed from time to time in our Securities and Exchange Commission filings.

Cautionary statements identifying important factors that could cause actual results to differ materially from our expectations are set forth in this Form 10-K, including without limitation the forward-looking statements that are referred to above. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements set forth in this Form 10-K under "Risk Factors" in Item 1A and in conjunction with the discussion in this Form 10-K in "Management's Discussion and Analysis of Financial Condition and Results of Operations" under the heading "Liquidity and Capital Resources." All forward-looking statements included in this Form 10-K and all subsequent written or oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by these cautionary statements. The forward-looking statements speak only as of the date made and, other than as required by law, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

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DEFINITIONS

Within this report, the following terms have these specific meanings:

“Alkylation” means the reaction of propylene or butylene (olefins) with isobutane to form an iso-paraffinic gasoline (inverse of cracking).

“Aromatic oil” is long chain oil that is highly aromatic in nature and is used to manufacture tires and industrial rubber products and in the production of specialty asphalt.

“BPD” means the number of barrels per calendar day of crude oil or petroleum products.

“BPSD” means the number of barrels per stream day (barrels of capacity in a 24 hour period) of crude oil or petroleum products.

“Base oil” is a lubricant grade oil initially produced from refining crude oil or through chemical synthesis that is used in producing lubricant products such as lubricating greases, motor oil and metal processing fluids.

“Biodiesel” means an alternative fuel produced from renewable biological resources.

“Black wax crude oil” is a low sulfur, low gravity crude oil produced in the Uintah Basin in Eastern Utah that has certain characteristics that require specific facilities to transport, store and refine into transportation fuels.

“Catalytic reforming” means a refinery process which uses a precious metal (such as platinum) based catalyst to convert low octane naphtha to high octane gasoline blendstock and hydrogen. The hydrogen produced from the reforming process is used to desulfurize other refinery oils and is a primary source of hydrogen for the refinery.

“Cracking” means the process of breaking down larger, heavier and more complex hydrocarbon molecules into simpler and lighter molecules.

“Crude oil distillation” means the process of distilling vapor from liquid crudes, usually by heating, and condensing the vapor slightly above atmospheric pressure turning it back to liquid in order to purify, fractionate or form the desired products.

“Ethanol” means a high octane gasoline blend stock that is used to make various grades of gasoline.

“FCC,” or fluid catalytic cracking, means a refinery process that breaks down large complex hydrocarbon molecules into smaller more useful ones using a circulating bed of catalyst at relatively high temperatures.

“Gas oil” is a group of petroleum distillation products having boiling points between kerosene and lubricating oil and is used as fuel in construction and agricultural machinery.

“Hydrodesulfurization” means to remove sulfur and nitrogen compounds from oil or gas in the presence of hydrogen and a catalyst at relatively high temperatures.

“Hydrogen plant” means a refinery unit that converts natural gas and steam to high purity hydrogen, which is then used in the hydrodesulfurization, hydrocracking and isomerization processes.

"HF alkylation" or hydrofluoric alkylation, means a refinery process which combines isobutane and C3/C4 olefins using HF acid as a catalyst to make high octane gasoline blend stock.

"Isomerization" means a refinery process for rearranging the structure of C5/C6 molecules without changing their size or chemical composition and is used to improve the octane of C5/C6 gasoline blendstocks.

"LPG" means liquid petroleum gases.

"Lubricant" or "lube" means a solvent neutral paraffinic product used in commercial heavy duty engine oils, passenger car oils and specialty products for industrial applications such as heat transfer, metalworking, rubber and other general process oil.

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“MSAT2” means Control of Hazardous Air Pollutants from Mobile Sources, a rule issued by the U.S. Environmental Protection Agency to reduce hazardous emissions from motor vehicles and motor vehicle fuels.

“MEK” means a lube process that separates waxy oil from non-waxy oils using methyl ethyl ketone as a solvent.

“MMBTU” means one million British thermal units.

“Natural gasoline” means a low octane gasoline blend stock that is purchased and used to blend with other high octane stocks produced to make various grades of gasoline.

“Paraffinic oil” is a high paraffinic, high gravity oil produced by extracting aromatic oils and waxes from gas oil and is used in producing high-grade lubricating oils.

“Rack back” represents the portion of our Lubricants and Specialty Products business operations that entails the processing of feedstocks into base oils.

“Rack forward” represents the portion of our Lubricants and Specialty Products business operations that entails the processing of base oils into finished lubricants and the packaging, distribution and sale to customers.

“Refinery gross margin” means the difference between average net sales price and average cost per barrel sold. This does not include the associated depreciation and amortization costs.

“Reforming” means the process of converting gasoline type molecules into aromatic, higher octane gasoline blend stocks while producing hydrogen in the process.

“RINs” means renewable identification numbers and refers to serial numbers assigned to credits generated from renewable fuel production under the Environmental Protection Agency’s Renewable Fuel Standard (“RFS”) regulations, which require blending renewable fuels into the nation's fuel supply. In lieu of blending, refiners may purchase these transferable credits in order to comply with the regulations.

“Roofing flux” is produced from the bottom cut of crude oil and is the base oil used to make roofing shingles for the housing industry.

“ROSE,” or “Solvent deasphalter / residuum oil supercritical extraction,” means a refinery unit that uses a light hydrocarbon like propane or butane to extract non-asphaltene heavy oils from asphalt or atmospheric reduced crude. These deasphalted oils are then further converted to gasoline and diesel in the FCC process. The remaining asphaltenes are either sold, blended to fuel oil or blended with other asphalt as a hardener.

“Scanfiner” is a refinery unit that removes sulfur from gasoline to produce low sulfur gasoline blendstock.

“Sour crude oil” means crude oil containing quantities of sulfur greater than 0.4 percent by weight, while “sweet crude oil” means crude oil containing quantities of sulfur equal to or less than 0.4 percent by weight.

“Vacuum distillation” means the process of distilling vapor from liquid crudes, usually by heating, and condensing the vapor below atmospheric pressure turning it back to a liquid in order to purify, fractionate or form the desired products.

“White oil” is an extremely pure, highly-refined petroleum product that has a wide variety of applications ranging from pharmaceutical to cosmetic products.

“WTI” means West Texas Intermediate and is a grade of crude oil used as a common benchmark in oil pricing. WTI is a sweet crude oil and has a relatively low density.

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Items 1 and 2. Business and Properties

COMPANY OVERVIEW

References herein to HollyFrontier Corporation (“HollyFrontier”) include HollyFrontier and its consolidated subsidiaries. In accordance with the Securities and Exchange Commission's (“SEC”) “Plain English” guidelines, this Annual Report on Form 10-K has been written in the first person. In this document, the words “we,” “our,” “ours” and “us” refer only to HollyFrontier and its consolidated subsidiaries or to HollyFrontier or an individual subsidiary and not to any other person, with certain exceptions. Generally, the words “we,” “our,” “ours” and “us” include Holly Energy Partners, L.P. (“HEP”) and its subsidiaries as consolidated subsidiaries of HollyFrontier, unless when used in disclosures of transactions or obligations between HEP and HollyFrontier or its other subsidiaries. This document contains certain disclosures of agreements that are specific to HEP and its consolidated subsidiaries and do not necessarily represent obligations of HollyFrontier. When used in descriptions of agreements and transactions, “HEP” refers to HEP and its consolidated subsidiaries.

We are principally an independent petroleum refiner that produces high-value light products such as gasoline, diesel fuel, jet fuel, specialty lubricant products, and specialty and modified asphalt. We were incorporated in Delaware in 1947 and maintain our principal corporate offices at 2828 N. Harwood, Suite 1300, Dallas, Texas 75201-1507. Our telephone number is 214-871-3555 and our internet website address is www.hollyfrontier.com. The information contained on our website does not constitute part of this Annual Report on Form 10-K. A print copy of this Annual Report on Form 10-K will be provided without charge upon written request to the Director, Investor Relations at the above address. A direct link to our SEC filings is available on our website under the Investor Relations tab. Also available on our website are copies of our Corporate Governance Guidelines, Audit Committee Charter, Compensation Committee Charter, Nominating / Corporate Governance Committee Charter, Environmental, Health, Safety, and Public Policy Committee Charter and Code of Business Conduct and Ethics, all of which will be provided without charge upon written request to the Director, Investor Relations at the above address. Our Code of Business Conduct and Ethics applies to all of our officers, employees and directors, including our principal executive officer, principal financial officer and principal accounting officer. Our common stock is traded on the New York Stock Exchange under the trading symbol “HFC.”

On October 29, 2016, our wholly-owned subsidiary, 9952110 Canada Inc., entered into a share purchase agreement with Suncor Energy Inc. (“Suncor”) to acquire 100% of the outstanding capital stock of Petro-Canada Lubricants Inc. (“PCLI”). The acquisition closed on February 1, 2017. Cash consideration paid was $862.1 million, or $1.125 billion in Canadian dollars.

PCLI is located in Mississauga, Ontario and is the largest producer of base oils in Canada with a plant having 15,600 BPD of lubricant production capacity, and is the largest manufacturer of high margin Group III base oils in North America. The facility is downstream integrated from base oils to finished lubricants and produces a broad spectrum of specialty lubricants and white oils that are distributed to end customers worldwide. The acquisition brings to HollyFrontier industry-leading product innovation and research and development capabilities, a global sales and distribution network and a strong brand portfolio recognized globally. With this transaction, we have also acquired a perpetual exclusive license to use the Petro-Canada trademark in association with the lubricant products. With the addition of PCLI, we became the fourth largest lubricants producer in North America with a capacity of 28,000 BPD, approximately 10% of North American production.

As of December 31, 2017, we:

- owned and operated a petroleum refinery in El Dorado, Kansas (the “El Dorado Refinery”), two refinery facilities located in Tulsa, Oklahoma (collectively, the “Tulsa Refineries”), a refinery in Artesia, New Mexico that is operated in conjunction with crude oil distillation and vacuum distillation and other facilities situated 65 miles away in Lovington, New Mexico (collectively, the “Navajo Refinery”), a refinery located in Cheyenne, Wyoming (the “Cheyenne Refinery”) and a refinery in Woods Cross, Utah (the “Woods Cross Refinery”);

- owned and operated PCLI located in Mississauga, Ontario, which produces base oils and other specialized lubricant products;
- owned and operated HollyFrontier Asphalt Company (“HFC Asphalt”), which operates various asphalt terminals in Arizona, New Mexico and Oklahoma; and
- owned a 59% limited partner interest and a non-economic general partner interest in HEP.

HEP is a variable interest entity (“VIE”) as defined under U.S. generally accepted accounting principles (“GAAP”). Information on HEP's assets and acquisitions completed between 2013 and 2017 can be found under the “Holly Energy Partners, L.P.” section provided later in this discussion of Items 1 and 2, “Business and Properties.”

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Our operations are currently organized into three reportable segments, Refining, Lubricants and Specialty Products and HEP. The Refining segment includes the operations of our El Dorado, Tulsa, Navajo, Cheyenne and Woods Cross Refineries and HFC Asphalt. The Lubricants and Specialty Products segment includes the operations of our Petro-Canada Lubricants business in addition to specialty lubricant products produced at our Tulsa Refinery. The HEP segment involves all of the operations of HEP. See Note 20 “Segment Information” in the Notes to Consolidated Financial Statements for additional information on our reportable segments.

REFINERY OPERATIONS

Our refinery operations serve the Mid-Continent, Southwest and Rocky Mountain regions of the United States. We own and operate five complex refineries having a combined crude oil processing capacity of 457,000 barrels per stream day. Each of our refineries has the complexity to convert discounted, heavy and sour crude oils into a high percentage of gasoline, diesel and other high-value refined products.

The tables presented below and elsewhere in this discussion of our refinery operations set forth information, including non-GAAP performance measures, about our refinery operations. The cost of products and refinery gross and net operating margins do not include the non-cash effects of lower of cost or market inventory valuation adjustments and depreciation and amortization. Reconciliations to amounts reported under GAAP are provided under “Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles” following Item 7A of Part II of this Form 10-K.

During the fourth quarter of 2017, we revised the following refining segment operating data computations: refinery gross margin; net operating margin; and operating expenses to better align with similar measurements provided by other companies in our industry and to facilitate comparison of our refining performance relative to our peers. Effective with this change, these measurements are now inclusive of all refining segment activities including HFC Asphalt operations and revenues and costs related to products purchased for resale and excess crude oil sales. All prior period data has been retrospectively adjusted to reflect our current presentation.

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Consolidated | | | |
| Crude charge (BPD) (1) | 438,800 | 423,910 | 432,560 |
| Refinery throughput (BPD) (2) | 472,010 | 457,480 | 463,580 |
| Sales of produced refined products (BPD) (3) | 452,270 | 440,640 | 442,650 |
| Refinery utilization (4) | 96.0 % | 92.8 % | 97.6 % |
| Average per produced barrel sold (5) | | | |
| Refinery gross margin (6) | $11.56 | $8.16 | $15.88 |
| Refinery operating expenses (7) | 6.10 | 5.64 | 5.82 |
| Net operating margin | $5.46 | $2.52 | $10.06 |
| | | | |
| Refinery operating expenses per throughput barrel (8) | $5.84 | $5.43 | $5.56 |
| | | | |
| Feedstocks: | | | |
| Sweet crude oil | 48 % | 48 % | 51 % |
| Sour crude oil | 25 % | 26 % | 25 % |
| Heavy sour crude oil | 16 % | 16 % | 15 % |
| Black wax crude oil | 4 % | 3 % | 2 % |
| Other feedstocks and blends | 7 % | 7 % | 7 % |
| Total | 100 % | 100 % | 100 % |

(1) Crude charge represents the barrels per day of crude oil processed at our refineries.

(2) Refinery throughput represents the barrels per day of crude and other refinery feedstocks input to the crude units and other conversion units at our refineries.

(3) Represents barrels sold of refined products produced at our refineries (including HFC Asphalt) and does not include volumes of refined products purchased for resale or volumes of excess crude oil sold.

(4) Represents crude charge divided by total crude capacity (BPSD). Effective July 1, 2016, our consolidated crude capacity increased from 443,000 BPSD to 457,000 BPSD upon completion of our Woods Cross Refinery expansion project.

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(5) Represents average amount per produced barrel sold, which is a non-GAAP measure. Reconciliations to amounts reported under GAAP are provided under “Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles” following Item 7A of Part II of this Form 10-K.

(6) Excludes lower of cost or market inventory valuation adjustments that increased refinery gross margin by $108.7 million and $291.9 million for the years ended December 31, 2017 and 2016, respectively, and decreased refinery gross margin by $227.0 million for the year ended December 31, 2015.

(7) Represents total refining segment operating expenses, exclusive of depreciation and amortization, divided by sales volumes of refined products produced at our refineries.

(8) Represents total refining segment operating expenses, exclusive of depreciation and amortization, divided by refinery throughput.

Products and Customers

Set forth below is information regarding refined product sales:

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Consolidated | | | |
| Sales of refined products: | | | |
| Gasolines | 52 % | 52 % | 52 % |
| Diesel fuels | 34 % | 34 % | 35 % |
| Jet fuels | 4 % | 4 % | 4 % |
| Fuel oil | 2 % | 2 % | 1 % |
| Asphalt | 4 % | 3 % | 3 % |
| Base oils | 2 % | 3 % | 2 % |
| LPG and other | 2 % | 2 % | 3 % |
| Total | 100% | 100% | 100% |

Light products are shipped to customers via product pipelines or are available for loading at our refinery truck facilities and terminals. Light products are also made available to customers at various other locations via exchange with other parties.

Our principal customers for gasoline include other refiners, convenience store chains, independent marketers and retailers. Diesel fuel is sold to other refiners, truck stop chains, wholesalers and railroads. Jet fuel is sold for commercial airline use. Specialty lubricant products are sold in both commercial and specialty markets. LPG's are sold to LPG wholesalers and LPG retailers. We produce and purchase asphalt products that are sold to governmental entities, paving contractors or manufacturers. Asphalt is also blended into fuel oil and is either sold locally or is shipped to the Gulf Coast. See Note 21 “Significant Customers” in the Notes to Consolidated Financial Statements for additional information on our significant customers.

Mid-Continent Region (El Dorado and Tulsa Refineries)

Facilities

The El Dorado Refinery is a high-complexity coking refinery with a 135,000 barrels per stream day processing capacity and the ability to process significant volumes of heavy and sour crudes. The integrated refining processes at the Tulsa West and East refinery facilities provide us with a highly complex refining operation having a combined crude processing rate of approximately 125,000 barrels per stream day.

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The following table sets forth information about our Mid-Continent region operations, including non-GAAP performance measures.

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Mid-Continent Region (El Dorado and Tulsa Refineries) | | | |
| Crude charge (BPD) (1) | 261,380 | 262,170 | 263,340 |
| Refinery throughput (BPD) (2) | 277,940 | 280,920 | 277,260 |
| Sales of produced refined products (BPD) (3) | 260,800 | 262,300 | 259,290 |
| Refinery utilization (4) | 100.5 % | 100.8 % | 101.3 % |
| | | | |
| Average per produced barrel sold (5) | | | |
| Refinery gross margin (6) | $9.91 | $7.44 | $15.02 |
| Refinery operating expenses (7) | 5.15 | 4.73 | 5.00 |
| Net operating margin | $4.76 | $2.71 | $10.02 |
| | | | |
| Refinery operating expenses per throughput barrel (8) | $4.83 | $4.42 | $4.68 |

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Mid-Continent Region (El Dorado and Tulsa Refineries) | | | |
| Feedstocks: | | | |
| Sweet crude oil | 61 % | 58 % | 59 % |
| Sour crude oil | 17 % | 18 % | 21 % |
| Heavy sour crude oil | 16 % | 17 % | 15 % |
| Other feedstocks and blends | 6 % | 7 % | 5 % |
| Total | 100% | 100% | 100% |

Footnote references are provided under our Consolidated Refinery Operating Data table on page 7.

The El Dorado Refinery is located on 1,100 acres south of El Dorado, Kansas and is a fully integrated refinery. The principal processing units at the El Dorado Refinery consist of crude and vacuum distillation; hydrodesulfurization of naphtha, kerosene, diesel, and gas oil streams; isomerization; catalytic reforming; aromatics recovery; catalytic cracking; alkylation; delayed coking; hydrogen production; and sulfur recovery. Refining operations began at the site in 1917 and the operating units now present include both newly constructed units and older units that have been upgraded over the years.

The Tulsa West facility is located on a 750-acre site in Tulsa, Oklahoma situated along the Arkansas River. The principal processing units at the Tulsa West facility consist of crude and vacuum distillation (with light ends recovery), naphtha hydrodesulfurization, propane de-asphalting, lubes extraction, MEK dewaxing, delayed coker and butane splitter units. Most of the operating units at the facility currently in service were built in the late 1950s and early 1960s. The refinery was reconfigured to emphasize specialty lubricant production in the early 1990s.

The Tulsa East facility is located on a 466-acre site also in Tulsa, Oklahoma situated along the Arkansas River. The principal process units at the Tulsa East facility consist of crude and vacuum distillation, naphtha hydrodesulfurization, FCC, isomerization, catalytic reforming, alkylation, scanfiner, diesel hydrodesulfurization and sulfur units.

Markets and Competition

The primary markets for the El Dorado Refinery's refined products are Colorado and the Plains States, which include the Kansas City metropolitan area. The gasoline, diesel and jet fuel produced by the El Dorado Refinery are primarily shipped via pipeline to terminals for distribution by truck or rail. We ship product via the NuStar Pipeline Operating Partnership L.P. Pipeline to the northern Plains States, via the Magellan Pipeline Company, L.P. (“Magellan”) mountain pipeline to Denver, Colorado, and on the Magellan mid-continent pipeline to the Plains States. Additionally, HEP's on-site truck and rail racks facilitate access to local refined product markets.

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The El Dorado Refinery faces competition from other Plains States and Mid-Continent refiners, but the principal competitors for the El Dorado Refinery are Gulf Coast refiners. Our Gulf Coast competitors typically have lower production costs due to greater economies of scale; however, they incur higher refined product transportation costs, which allows the El Dorado Refinery to compete effectively in the Plains States and Rocky Mountain region with Gulf Coast refineries.

The Tulsa Refineries serve the Mid-Continent region of the United States. Distillates and gasolines are primarily delivered from the Tulsa Refineries to market via pipelines owned and operated by Magellan. These pipelines connect the refinery to distribution channels throughout Colorado, Oklahoma, Kansas, Missouri, Illinois, Iowa, Minnesota, Nebraska and Arkansas. Additionally, HEP's on-site truck and rail racks facilitate access to local refined product markets.

We have an offtake agreement through November 2019 with an affiliate of Sinclair whereby Sinclair purchases 45,000 to 50,000 BPD of gasoline and distillate products at market prices from us to supply its branded and unbranded marketing network throughout the Midwest. Upon expiration, the offtake agreement can be renewed by Sinclair for an additional five-year term. For the year ended December 31, 2017, sales to Sinclair represented approximately 21% of the Tulsa Refineries' total sales and 8% of our total consolidated sales.

The Tulsa Refineries' principal customers for conventional gasoline include Sinclair, other refiners, convenience store chains, independent marketers and retailers. Sinclair, truck stop operators and railroads are the primary diesel customers. Jet fuel is sold primarily for commercial use. The refinery's asphalt and roofing flux products are sold via truck or railcar directly from the refineries or to customers throughout the Mid-Continent region primarily to paving contractors and manufacturers of roofing products.

For the year ended December 31, 2017, sales to Shell Oil represented approximately 12% of our Mid-Continent refineries' total sales and 9% of our total consolidated sales. We have a sales agreement with an affiliate of Shell Oil under which Shell Oil purchases gasoline and diesel production of the El Dorado Refinery and Tulsa Refineries at market prices through October 2018 primarily to support its branded marketing network.

Products

Set forth below is information regarding refined product sales attributable to our Mid-Continent region:

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Mid-Continent Region (El Dorado and Tulsa Refineries) | | | |
| Sales of refined products: | | | |
| Gasolines | 50 % | 50 % | 50 % |
| Diesel fuels | 33 % | 33 % | 33 % |
| Jet fuels | 7 % | 7 % | 7 % |
| Fuel oil | 1 % | 1 % | 1 % |
| Asphalt | 3 % | 3 % | 2 % |
| Base oils | 4 % | 4 % | 4 % |
| LPG and other | 2 % | 2 % | 3 % |
| Total | 100% | 100% | 100% |

Crude Oil and Feedstock Supplies

Both of our Mid-Continent Refineries are connected via pipeline to Cushing, Oklahoma, a significant crude oil pipeline trading and storage hub. The El Dorado Refinery and the Tulsa Refineries are located approximately 125 miles and 50 miles, respectively, from Cushing, Oklahoma. Local pipelines provide direct access to regional

Oklahoma crude production as well as access to United States onshore and Canadian crudes. The proximity of the refineries to the Cushing pipeline and storage hub provides the flexibility to optimize their crude slate with a wide variety of crude oil supply options. Additionally, we have transportation service agreements to transport Canadian crude oil on the Spearhead and Keystone Pipelines, enabling us to transport Canadian crude oil to Cushing for subsequent shipment to either of our Mid-Continent Refineries.

We also purchase isobutane, natural gasoline, butane and other feedstocks for processing at our Mid-Continent Refineries. The El Dorado Refinery is connected to Conway, Kansas, a major gas liquids trading and storage hub, via the Oneok Pipeline. From time to time, other feedstocks such gas oil, naphtha and light cycle oil are purchased from other refiners for use at our refineries.

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Southwest Region (Navajo Refinery)

Facilities

The Navajo Refinery has a crude oil processing capacity of 100,000 barrels per stream day and has the ability to process sour crude oils into high-value light products such as gasoline, diesel fuel and jet fuel.

The following table sets forth information about our Southwest region operations, including non-GAAP performance measures.

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Southwest Region (Navajo Refinery) | | | |
| Crude charge (BPD) [1] | 100,040 | 98,090 | 100,450 |
| Refinery throughput (BPD) [2] | 109,280 | 107,690 | 111,840 |
| Sales of produced refined products (BPD) [3] | 111,630 | 111,390 | 114,790 |
| Refinery utilization [4] | 100.0 % | 98.1 % | 100.5 % |
| | | | |
| Average per produced barrel sold [5] | | | |
| Refinery gross margin [6] | $12.40 | $9.49 | $16.34 |
| Refinery operating expenses [7] | 5.20 | 5.05 | 5.24 |
| Net operating margin | $7.20 | $4.44 | $11.10 |
| | | | |
| Refinery operating expenses per throughput barrel [8] | $5.31 | $5.23 | $5.38 |

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Southwest Region (Navajo Refinery) | | | |
| Feedstocks: | | | |
| Sweet crude oil | 25 % | 28 % | 36 % |
| Sour crude oil | 66 % | 63 % | 54 % |
| Other feedstocks and blends | 9 % | 9 % | 10 % |
| Total | 100% | 100% | 100% |

Footnote references are provided under our Consolidated Refinery Operating Data table on page 7.

The Navajo Refinery's Artesia, New Mexico facility is located on a 561-acre site and is a fully integrated refinery with crude distillation, vacuum distillation, FCC, ROSE (solvent deasphalter), HF alkylation, catalytic reforming, hydrodesulfurization, mild hydrocracking, isomerization, sulfur recovery and product blending units. The operating units at the Artesia facility include newly constructed units, older units that have been relocated from other facilities and upgraded and re-erected in Artesia, and units that have been operating as part of the Artesia facility (with periodic major maintenance) for many years, in some very limited cases since before 1970.

The Artesia facility is operated in conjunction with a refining facility located in Lovington, New Mexico, approximately 65 miles east of Artesia. The principal equipment at the Lovington facility consists of a crude distillation unit and associated vacuum distillation units that were constructed after 1970. The Lovington facility processes crude oil into intermediate products that are transported to Artesia by means of three intermediate pipelines owned by HEP. These products are then upgraded into finished products at the Artesia facility. The combined crude oil capacity of the Navajo Refinery facilities is 100,000 BPSD and it typically processes or blends an additional 10,000 BPSD of natural gasoline, butane, gas oil and naphtha.

Markets and Competition

The Navajo Refinery primarily serves the southwestern United States market, including the metropolitan areas of El Paso, Texas; Albuquerque, Moriarty and Bloomfield, New Mexico; Phoenix and Tucson, Arizona; and portions of northern Mexico. Our products are shipped through HEP's pipelines from Artesia, New Mexico to El Paso, Texas and from El Paso to Albuquerque and to Mexico via products pipeline systems owned by Magellan and from El Paso to Tucson and Phoenix via a products pipeline system owned by Kinder Morgan's subsidiary, SFPP, L.P. (“SFPP”). In addition, petroleum products from the Navajo Refinery are transported to markets in northwest New Mexico, to Moriarty, New Mexico, near Albuquerque, via HEP's pipelines running from Artesia to San Juan County, New Mexico, and to Bloomfield, New Mexico. We have refined product storage through our pipelines and terminals agreement with HEP at terminals in Tucson, Arizona, and Artesia and Moriarty, New Mexico.

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El Paso Market
The El Paso market for refined products is currently supplied by a number of area and Gulf Coast refiners and pipelines. Area refiners include Navajo, WRB Refining, LLC ("WRB") (a joint venture between Phillips 66 and Cenovus Energy), Valero, Delek and Andeavor. Pipelines serving this market are owned by Magellan, NuStar Energy L.P. and HEP. Refined products from the Gulf Coast are transported via Magellan pipelines.

Arizona Market
The Arizona market for refined products is currently supplied by a number of refiners via pipelines and trucks. Refiners include companies located in west Texas, eastern New Mexico, northern New Mexico, the Gulf Coast and the West Coast. Magellan's pipeline systems deliver refined products from the Texas Gulf Coast to El Paso and, through interconnections with third-party common carrier pipelines, into the Arizona market.

New Mexico Markets
The Artesia, Albuquerque, Moriarty and Bloomfield markets are supplied by a number of refiners via pipelines and trucks. Refiners include Navajo, Valero, Andeavor, Delek and WRB.

We use a common carrier pipeline out of El Paso to serve the Albuquerque market. In addition, HEP leases from Mid-America Pipeline Company, L.L.C., a pipeline between White Lakes, New Mexico and the Albuquerque vicinity and Bloomfield, New Mexico. The lease agreement currently runs through 2026, and HEP has options to renew for one additional ten-year period. HEP owns and operates a 12-inch pipeline from the Navajo Refinery to the leased pipeline as well as terminalling facilities in Moriarty, which is 40 miles east of Albuquerque. This facility permits us to ship light products to the Albuquerque and Santa Fe, New Mexico areas. In addition, we serve southern Colorado and northern Arizona primarily out of a terminal in Bloomfield, New Mexico, which is owned by Andeavor.

Products
Set forth below is information regarding refined product sales attributable to our Southwest region:

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Southwest Region (Navajo Refinery) | | | |
| Sales of refined products: | | | |
| Gasolines | 51 % | 52 % | 53 % |
| Diesel fuels | 39 % | 39 % | 38 % |
| Fuel oil | 3 % | 3 % | 2 % |
| Asphalt | 4 % | 3 % | 4 % |
| LPG and other | 3 % | 3 % | 3 % |
| Total | 100% | 100% | 100% |

Crude Oil and Feedstock Supplies
The Navajo Refinery is situated near the Permian Basin, an area that has historically, and continues to have, abundant supplies of crude oil available both for regional users and for export to other areas. We purchase crude oil from independent producers in southeastern New Mexico and west Texas as well as from major oil companies. The crude oil is gathered through HEP's pipelines and through third-party tank trucks and crude oil pipeline systems for delivery to the Navajo Refinery.

We also purchase volumes of isobutane, natural gasoline and other feedstocks to supply the Navajo Refinery from sources in Texas and the Mid-Continent area that are delivered to our region on a common carrier pipeline owned by Enterprise Products, L.P. Ultimately all volumes of these products are shipped to the Artesia refining facilities on HEP's intermediate pipelines running from Lovington to Artesia. From time to time, we purchase gas oil, naphtha and light cycle oil from other refiners for use as feedstock.

Rocky Mountain Region (Cheyenne and Woods Cross Refineries)

Facilities

The Cheyenne and the Woods Cross Refineries have crude oil processing capacities of 52,000 and 45,000 barrels per stream day, respectively. The Cheyenne Refinery processes heavy Canadian crudes as well as local sweet crudes such as that produced from the Bakken shale and similar resources. The Woods Cross Refinery processes regional sweet and black wax crude as well as Canadian sour crude oils into high-value light products.

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The following table sets forth information about our Rocky Mountain region operations, including non-GAAP performance measures.

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Rocky Mountain Region (Cheyenne and Woods Cross Refineries) | | | |
| Crude charge (BPD) (1) | 77,380 | 63,650 | 68,770 |
| Refinery throughput (BPD) (2) | 84,790 | 68,870 | 74,480 |
| Sales of produced refined products (BPD) (3) | 79,840 | 66,950 | 68,570 |
| Refinery utilization (4) | 79.8 % | 65.6 % | 82.9 % |
| | | | |
| Average per produced barrel sold (5) | | | |
| Refinery gross margin (6) | $15.78 | $8.80 | $18.43 |
| Refinery operating expenses (7) | 10.46 | 10.17 | 9.90 |
| Net operating margin | $5.32 | $(1.37) | $8.53 |
| | | | |
| Refinery operating expenses per throughput barrel (8) | $9.85 | $9.89 | $9.12 |

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Rocky Mountain Region (Cheyenne and Woods Cross Refineries) | | | |
| Feedstocks: | | | |
| Sweet crude oil | 34 % | 39 % | 42 % |
| Heavy sour crude oil | 35 % | 35 % | 37 % |
| Black wax crude oil | 22 % | 18 % | 13 % |
| Other feedstocks and blends | 9 % | 8 % | 8 % |
| Total | 100% | 100% | 100% |

Footnote references are provided under our Consolidated Refinery Operating Data table on page 7.

The Cheyenne Refinery facility is located on a 255-acre site and is a fully integrated refinery with crude distillation, vacuum distillation, coking, FCC, HF alkylation, catalytic reforming, hydrodesulfurization of naphtha and distillates, butane isomerization, hydrogen production, sulfur recovery and product blending units. The operating units at the Cheyenne Refinery include both newly constructed units and older units that have been upgraded over the years.

The Woods Cross Refinery facility is located on a 200-acre site and is a fully integrated refinery with crude distillation, solvent deasphalter, FCC, HF alkylation, catalytic reforming, hydrodesulfurization, isomerization, sulfur recovery and product blending units. The operating units at the Woods Cross Refinery include newly constructed units, older units that have been relocated from other facilities, upgraded and re-erected in Woods Cross, and units that have been operating as part of the Woods Cross facility (with periodic major maintenance) for many years, in some very limited cases since before 1950. The facility typically processes or blends an additional 2,000 BPSD of natural gasoline, butane and gas oil over its 45,000 BPSD capacity.

We own and operate 4 miles of hydrogen pipeline that connects the Woods Cross Refinery to a hydrogen plant located on the property of Chevron's Salt Lake City Refinery. Additionally, HEP owns and operates 12 miles of crude oil and refined products pipelines that allows us to connect our Woods Cross Refinery to common carrier pipeline systems.

Markets and Competition

The Cheyenne Refinery primarily markets its products in eastern Colorado, including metropolitan Denver, eastern Wyoming and western Nebraska. Because of the location of the Cheyenne Refinery, we are able to sell a significant portion of its diesel directly from the truck rack at the refinery, therefore, eliminating transportation costs. The Cheyenne Refinery ships refined products via the Magellan pipeline serving Denver and Colorado Springs, Colorado.

Denver Market

The most competitive market for the Cheyenne Refinery is the Denver metropolitan area. Three other refineries supply the Denver market: Wyoming refineries near Rawlins and in Casper owned by Sinclair and a refinery in Denver owned by Suncor. Five product pipelines also supply Denver, including three from outside the region.

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Utah Market

The Woods Cross Refinery's primary market is Utah, which is currently supplied by a number of local refiners and the Pioneer Pipeline. In addition to our Woods Cross Refinery, local area refiners include Chevron, Andeavor, Big West and Silver Eagle. Other refiners that ship into the Woods Cross market via the Pioneer Pipeline include Sinclair, ExxonMobil, CHS and Phillips 66. We estimate the four local refineries that compete with our Woods Cross Refinery have a combined capacity to process approximately 165,000 BPD of crude oil. The five Utah refineries collectively supply an estimated 70% of the gasoline and distillate products consumed in the states of Utah and Idaho, with the remainder imported from refineries in Wyoming and Montana via the Pioneer Pipeline owned jointly by Sinclair and Phillips 66. Approximately 40% - 45% of the gasoline and diesel fuel produced by our Woods Cross Refinery is sold through a network of Phillips 66 branded marketers under a long-term supply agreement.

Idaho, Wyoming, Eastern Washington and Nevada Markets

We supply a small percentage of the refined products consumed in the combined Idaho, Wyoming, eastern Washington and Nevada markets. Our Woods Cross Refinery ships refined products over a common carrier pipeline system owned by Andeavor Logistics Northwest Pipelines LLC (“Andeavor Logistics”) to numerous terminals, including HEP's terminal at Spokane, Washington and to terminals at Pocatello and Boise, Idaho and Pasco, Washington that are owned by Andeavor Logistics. We sell to branded and unbranded customers in these markets. In 2012, we began shipping refined products to Cedar City, Utah and Las Vegas, Nevada via the UNEV Pipeline. The majority of the Las Vegas, Nevada market for refined products is supplied by various West Coast refiners and suppliers via Kinder Morgan's CalNev common carrier pipeline system.

Products

Set forth below is information regarding refined product sales attributable to our Rocky Mountain region:

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Rocky Mountain Region (Cheyenne and Woods Cross Refineries) | | | |
| Sales of refined products: | | | |
| Gasolines | 58 % | 59 % | 57 % |
| Diesel fuels | 32 % | 32 % | 35 % |
| Fuel oil | 3 % | 2 % | 3 % |
| Asphalt | 4 % | 4 % | 3 % |
| LPG and other | 3 % | 3 % | 2 % |
| Total | 100% | 100% | 100% |

Crude Oil and Feedstock Supplies

Crude oil is transported to the Cheyenne Refinery from suppliers in Canada, Colorado, Nebraska, North Dakota and Montana via common carrier pipelines owned by Spectra, Plains, HEP and Suncor Energy, as well as by truck. The Woods Cross Refinery currently obtains crude oil from suppliers in Canada, Wyoming, Utah and Colorado as delivered via common carrier pipelines, including the SLC Pipeline and Frontier Pipeline owned by HEP. Supplies of black wax crude oil are shipped via truck.

HollyFrontier Asphalt Company

We manufacture commodity and modified asphalt products at our manufacturing facilities located in Glendale, Arizona; Albuquerque, New Mexico; Artesia, New Mexico and Catoosa, Oklahoma. Our Albuquerque and Artesia facilities manufacture modified hot asphalt products and commodity and modified asphalt emulsions from base asphalt materials provided by our refineries and third-party suppliers. Our Glendale facility manufactures modified hot asphalt products from base asphalt materials provided by our refineries and third-party suppliers. Our Catoosa facility manufactures specialty modified asphalt and commodity asphalt products. We market these asphalt products in Arizona, Colorado, New Mexico, Oklahoma, Kansas, Missouri, Texas, Arkansas and northern Mexico. Our products are shipped via third-party trucking companies to commercial customers that provide asphalt based materials for commercial and government projects.

## LUBRICANTS AND SPECIALTY PRODUCTS OPERATIONS

Our lubricants and specialty products operations consist of our Petro-Canada Lubricants and Tulsa rack forward businesses.

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Our Petro-Canada Lubricants business produces automotive, industrial and food grade lubricants and greases, base and process oils and specialty fluids and is the largest manufacturer of high margin Group III base oils in North America and is the world's largest producer of pharmaceutical white oils. Products are marketed in 80 countries worldwide to a diverse customer base through a global sales force and distributor network.

Our Tulsa Refinery produces high quality base oils, process oils, waxes, horticultural oils and asphalt performance products. Products are marketed worldwide through strategically located terminals in the United States and selected distributors internationally.

The following table sets forth information about our lubricants and specialty products operations and includes our Petro-Canada Lubricants business for the period February 1, 2017 (date of acquisition) through December 31, 2017.

| | Years Ended December 31, | | |
|---|---|---|---|
| Lubricants and Specialty Products | 2017 | 2016 | 2015 |
| Throughput (BPD) | 21,710 | — | — |
| Sales of produced refined products (BPD) | 31,480 | 12,030 | 11,140 |
| | | | |
| Sales of produced refined products: | | | |
| Finished products | 45 % | 50 % | 52 % |
| Base oils | 31 % | 50 % | 48 % |
| Other | 24 % | — % | — % |
| Total | 100 % | 100 % | 100 % |

PCLI owns and operates a refinery located in Mississauga, Ontario having lubricant production capacity of 15,600 barrels per stream day and has the flexibility to match unique lubricant product formulations. The primary operating units include a hydrogen plant and hydrotreating, solvent dewaxing, hydrodentrification, catalytic dewaxing and hydrobon/platformer units. The Mississauga plant also includes packaging facilities and has extensive distribution capabilities with marine, truck and rail access.

HOLLY ENERGY PARTNERS, L.P.

HEP is a Delaware limited partnership that trades on the New York Stock Exchange under the trading symbol “HEP.” HEP owns and operates logistic assets consisting of petroleum product and crude oil pipelines, terminals, tankage, loading rack facilities and refinery processing units that principally support our refining and marketing operations in the Mid-Continent, Southwest and Rocky Mountain regions of the United States and Delek's refinery in Big Spring, Texas. Additionally, HEP owns a 75% interest in UNEV Pipeline, LLC (“UNEV”), the owner of a pipeline running from Woods Cross, Utah to Las Vegas, Nevada (the “UNEV Pipeline”) and associated product terminals; a 50% interest in Osage Pipe Line Company, LLC, the owner of a pipeline running from Cushing, Oklahoma to El Dorado, Kansas (the “Osage Pipeline”); and a 50% interest in Cheyenne Pipeline, LLC, the owner of a pipeline running from Fort Laramie, Wyoming to Cheyenne, Wyoming (the “Cheyenne Pipeline”).

HEP generates revenues by charging tariffs for transporting petroleum products and crude oil through its pipelines, by leasing certain pipeline capacity to Delek, by charging fees for terminalling and storing refined products and other hydrocarbons and providing other services at its storage tanks, terminals and refinery processing units. HEP does not take ownership of products that it transports, terminals, stores or refines; therefore, it is not directly exposed to changes in commodity prices.

HEP's recent acquisitions (2015 through present) are summarized below:

SLC Pipeline and Frontier Aspen

On October 31, 2017, HEP acquired the remaining 75% interest in SLC Pipeline LLC, the owner of a pipeline that serves refineries in the Salt Lake City, Utah area (the “SLC Pipeline”), and the remaining 50% interest in Frontier Aspen LLC, the owner of a pipeline running from Wyoming to Frontier Station, Utah (the “Frontier Pipeline”), from subsidiaries of Plains All American Pipeline, L.P. (“Plains”) for total cash consideration of $250.0 million.

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Woods Cross Assets
On October 3, 2016, HEP acquired from us all the membership interests of Woods Cross Operating LLC, which owns the crude unit, FCCU and polymerization unit of the first phase of our Woods Cross Refinery expansion project that was completed in the second quarter of 2016, for cash consideration of approximately $278.0 million.

Cheyenne Pipeline
On June 3, 2016, HEP acquired a 50% interest in Cheyenne Pipeline LLC, owner of the Cheyenne Pipeline, in exchange for a contribution of $42.6 million in cash to Cheyenne Pipeline LLC. The 87-mile crude oil pipeline runs from Fort Laramie, Wyoming to Cheyenne, Wyoming and has an 80,000 BPD capacity.

Tulsa Tanks
On March 31, 2016, HEP acquired crude oil tanks located at our Tulsa Refineries from Plains for $39.5 million.

Magellan Asset Exchange
On February 22, 2016, we obtained a 50% membership interest in Osage Pipe Line Company, LLC (“Osage”) in exchange for a 20-year terminalling services agreement, whereby, a subsidiary of Magellan Midstream Partners (“Magellan Midstream”) will provide terminalling services for all of our products originating in Artesia, New Mexico that require terminalling in or through El Paso, Texas. Osage is the owner of the Osage pipeline, a 135-mile pipeline that transports crude oil from Cushing, Oklahoma to our El Dorado Refinery in Kansas and also has a connection to the Jayhawk pipeline that services the CHS refinery in McPherson, Kansas. The Osage pipeline is the primary pipeline that supplies our El Dorado Refinery with crude oil. Also on February 22, 2016, we contributed the 50% membership interest in Osage to HEP, and in exchange received HEP's El Paso terminal. Pursuant to this exchange, HEP agreed to build two connections to Magellan Midstream's El Paso terminal. In addition, HEP agreed to become operator of the Osage Pipeline.

El Dorado Asset Transaction
On November 1, 2015, HEP acquired from us newly constructed naphtha fractionation and hydrogen generation units at our El Dorado Refinery for cash consideration of $62.0 million.

Frontier Pipeline Transaction
On August 31, 2015, HEP purchased a 50% interest in Frontier Aspen LLC (previously known as Frontier Pipeline Company), owner of the Frontier Pipeline, from an affiliate of Enbridge, Inc. for $55.0 million. The 289-mile crude oil pipeline runs from Casper, Wyoming to Frontier Station, Utah, has a 72,000 BPD capacity and supplies Canadian and Rocky Mountain crudes to Salt Lake City area refiners through a connection to the SLC Pipeline. As noted above, HEP acquired the remaining 50% interest on October 31, 2017.

Crude Tank Farm Asset Transaction
On March 6, 2015, HEP purchased an existing crude tank farm adjacent to our El Dorado Refinery from an unrelated third-party for $27.5 million in cash. We are the main customer of this crude tank farm.

Transportation Agreements

Agreements with HEP
HEP serves our refineries under long-term pipeline, terminal and tankage throughput agreements and refinery processing tolling agreements expiring from 2020 through 2036. Under these agreements, we pay HEP fees to transport, store and process throughput volumes of refined products, crude oil and feedstocks on HEP's pipelines, terminals, tankage, loading rack facilities and refinery processing units that result in minimum annual payments to HEP, including UNEV (a consolidated subsidiary of HEP). Under these agreements, the agreed upon tariff rates are

subject to annual tariff rate adjustments on July 1 at a rate based upon the percentage change in Producer Price Index ("PPI") or Federal Energy Regulatory Commission index. As of December 31, 2017, these agreements result in minimum annualized payments to HEP of $324.5 million.

Our transactions with HEP including the transactions discussed above and fees paid under our transportation agreements with HEP and UNEV are eliminated and have no impact on our consolidated financial statements.

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Agreement with Delek

HEP has a 15-year pipelines and terminals agreement with Delek expiring in 2020, under which Delek has agreed to transport on HEP's pipelines and throughput through its terminals, volumes of refined products that results in a minimum level of annual revenue. The agreed upon tariff rates are increased or decreased annually at a rate equal to the percentage change in PPI, but will not decrease below the initial tariff rate. Also, HEP has a capacity lease agreement with Delek under which Delek leases space on HEP's Orla to El Paso pipeline for the shipment of up to 15,000 barrels of refined product per day. The terms under this agreement expire in 2018 through 2022.

As of December 31, 2017, HEP's assets included:

Pipelines

- approximately 810 miles of refined product pipelines, including 340 miles of leased pipelines, that transport gasoline, diesel and jet fuel principally from our Navajo Refinery in New Mexico to our customers in the metropolitan and rural areas of Texas, New Mexico, Arizona, Colorado, Utah and northern Mexico;
- approximately 510 miles of refined product pipelines that transport refined products from Delek's Big Spring refinery in Texas to its customers in Texas and Oklahoma;
- two 65-mile pipelines that transport intermediate feedstocks and crude oil from our Navajo Refinery crude oil distillation and vacuum facilities in Lovington, New Mexico to our petroleum refinery facilities in Artesia, New Mexico;
- one 65-mile intermediate pipeline that is used for the shipment of crude oil from the gathering systems in Barnsdall and Beeson, New Mexico to our Navajo Refinery;
- the SLC Pipeline, a 95-mile intrastate crude oil pipeline system that transports crude oil into the Salt Lake City, Utah area from the Utah terminus of the Frontier Pipeline, as well as crude oil flowing from Wyoming and Utah via Plains Rocky Mountain Pipeline;
- the Frontier Pipeline, a 289-mile crude oil pipeline running from Casper, Wyoming to Frontier Station, Utah through a connection to the SLC Pipeline;
- approximately 940 miles of crude oil trunk, gathering and connection pipelines located in west Texas, New Mexico and Oklahoma that primarily deliver crude oil to our Navajo Refinery;
- approximately 8 miles of refined product pipelines that support our Woods Cross Refinery located near Salt Lake City, Utah;
- gasoline and diesel connecting pipelines that support our Tulsa East facility;
- five intermediate product and gas pipelines between our Tulsa East and Tulsa West facilities;
- crude receiving assets located at our Cheyenne Refinery;
- a 75% interest in the UNEV Pipeline, a 427-mile, 12-inch refined products pipeline running from Woods Cross, Utah to Las Vegas, Nevada;
- a 50% interest in the Osage Pipeline, a 135-mile pipeline that transports crude oil from Cushing, Oklahoma to our El Dorado Refinery and also has a connection to the Jayhawk pipeline that services the CHS refinery in McPherson, Kansas; and
- a 50% interest in the Cheyenne Pipeline, an 87-mile crude oil pipeline running from Fort Laramie, Wyoming to Cheyenne, Wyoming.

Refined Product Terminals and Refinery Tankage

- three refined product terminals located in Moriarty and Bloomfield, New Mexico; and Tucson, Arizona, with an aggregate capacity of approximately 600,000 barrels, that are integrated with HEP's refined product pipeline system that serves our Navajo Refinery;
- one refined product terminal located in Spokane, Washington, with a capacity of approximately 400,000 barrels, that serves third-party common carrier pipelines;
- one refined product terminal near Mountain Home, Idaho, with a capacity of 120,000 barrels, that serves a nearby United States Air Force Base;

- two refined product terminals, located in Wichita Falls and Abilene, Texas, and one tank farm in Orla, Texas with aggregate capacity of approximately 500,000 barrels, that are integrated with HEP's refined product pipelines that serve Delek's Big Spring, Texas refinery;
- a refined product loading rack facility at each of our El Dorado, Tulsa, Navajo, Cheyenne and Woods Cross Refineries, heavy product / asphalt loading rack facilities at our Tulsa East facility, Navajo Refinery Lovington facility and Cheyenne Refinery, LPG loading rack facilities at our El Dorado Refinery, Tulsa West facility and Cheyenne Refinery, lube oil loading racks at our Tulsa West facility and crude oil Leased Automatic Custody Transfer units located at our Cheyenne Refinery;
- on-site crude oil tankage at our Tulsa, El Dorado, Navajo, Cheyenne and Woods Cross Refineries having an aggregate storage capacity of approximately 1,350,000 barrels;

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- on-site refined and intermediate product tankage at our El Dorado, Tulsa and Cheyenne Refineries having an aggregate storage capacity of approximately 8,800,000 barrels;
- eleven crude oil tanks adjacent to our El Dorado Refinery with a capacity of approximately 1,200,000 barrels that primarily serve our El Dorado Refinery;
- Frontier Pipeline's tankage with an aggregate capacity of approximately 72,000 barrels; and
- a 75% interest in UNEV Pipeline's product terminals near Cedar City, Utah and Las Vegas, Nevada with an aggregate capacity of approximately 615,000 barrels.

Refinery Processing Units

- a naphtha fractionation tower at our El Dorado Refinery, with a capacity of 50,000 BPD of desulfurized naphtha;
- a hydrogen generation unit at our El Dorado Refinery, with a capacity of 6.1 million standard cubic feet per day of natural gas.
- a crude unit, which is primarily an atmospheric distillation tower, a desalter and heat exchangers, at our Woods Cross Refinery, with a feedstock capacity of 15,000 BPD of crude oil;
- a FCC unit at our Woods Cross Refinery, which converts crude oil to high-value refined products such as gasoline, diesel and liquefied petroleum gases, with a capacity of 8,000 BPD; and
- a polymerization unit at our Woods Cross Refinery, that uses the output of the fluid cracking unit and converts them into gasoline blendstock, with a capacity of 2,500 BPD.

ADDITIONAL OPERATIONS AND OTHER INFORMATION

Corporate Offices

We lease approximately 92,000 square feet for our principal corporate offices in Dallas, Texas. The lease for our principal corporate offices expires in 2023. Functions performed in the Dallas office include overall corporate management, refinery and HEP management, planning and strategy, corporate finance, crude acquisition, logistics, contract administration, marketing, investor relations, governmental affairs, accounting, tax, treasury, information technology, legal and human resources support functions.

Employees and Labor Relations

As of December 31, 2017, we had 3,522 employees, of which 1,139 are currently covered by collective bargaining agreements having various expiration dates between 2018 and 2020. We consider our employee relations to be good.

Environmental Regulation

We are subject to numerous federal, state, provincial and local laws regulating worker health and safety, the discharge of substances into the environment, or otherwise relating to the protection of the environment and natural resources. Permits or other authorizations are required under these laws for the operation of our refineries, pipelines and related facilities, which can result in the imposition of costly reporting, installation of pollution control equipment and maintenance obligations. Moreover, these permits and authorizations are subject to revocation, modification and renewal, as well as challenges from third parties.

Failure to comply with these laws and regulations may result in the assessment of sanctions, including administrative, civil and criminal penalties; the imposition of investigatory, remedial or corrective action obligations or the incurrence of capital expenditures; the occurrence of delays in the permitting, development or expansion of projects; and the issuance of injunctive relief limiting or prohibiting certain operations. Compliance with applicable environmental laws, regulations and permits will continue to have an impact on our operations, the results of our operations and our capital expenditures.

Clean Air Act - Our operations are subject to certain requirements of the Federal Clean Air Act ("CAA") as well as related state and local laws and regulations. Certain CAA regulatory programs applicable to our refineries require capital expenditures for the installation of certain air pollution control devices, operational procedures to minimize emissions, and monitoring and reporting of emissions. Additionally, the Environmental Protection Agency ("EPA") has the authority under the CAA to modify the formulation of the refined transportation fuel products we manufacture in order to limit the emissions associated with their final use. Also, in October 2015, the EPA lowered the National Ambient Air Quality Standard ("NAAQS") for ozone from 75 to 70 parts per billion, and state implementation of the revised NAAQS could result in stricter permitting requirements, delay or the inability to obtain such permits, and increased expenditures for pollution control equipment, the costs of which could be significant. Moreover, in February 2016, a new EPA rule became effective that requires, among other things, benzene monitoring at the refinery fence line beginning in January 2018 and submittal of fence line monitoring data to the EPA on a quarterly basis; upgraded storage tank controls requirements, including new applicability thresholds; enhanced performance requirements for flares, continuous monitoring of flares and pressure release devices, and analysis and remedy of flare release events; compliance with emissions standards for delayed coking units; and requirements related to air emissions resulting from startup, shutdown and maintenance

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events. These new rules, as well as subsequent rulemaking under the CAA or similar laws, or new agency interpretations of existing laws and regulations, may necessitate additional expenditures in future years and result in increased costs on our operations.

Fuel Quality Regulation - Also, we are subject to the EPA's Control of Hazardous Air Pollutants from Mobile Sources ("MSAT2") regulations that impose reductions in the benzene content of our produced gasoline. Our refineries currently purchase benzene credits to meet these requirements. If economically justified or otherwise determined to be beneficial, we could implement additional benzene reduction projects to eliminate the need to purchase benzene credits.

Pursuant to the Energy Independence and Security Act of 2007 ("EISA"), and the EPA's corresponding Renewable Fuel Standard ("RFS") regulations, most refiners are required to blend increasing amounts of biofuels with refined products through 2022 or purchase Renewable Identification Numbers ("RINs") in lieu of blending. Under the RFS, the percentage of renewable fuels that refineries are obligated to blend into their finished petroleum products is adjusted annually. In November 2017, the EPA finalized the RFS targets for 2018, which maintained the volume required for conventional (i.e., corn ethanol) renewable fuel, increased the volume required for advanced biofuels, and reduced the volume required for cellulosic biofuel compared to the 2017 RFS requirements. The EPA also maintained the biomass-based diesel volume for 2019 compared to 2018. Because the EISA requires specified volumes of biofuels, if the demand for motor fuels decreases in future years, even higher percentages of biofuels may be required.

The EPA has historically used its waiver authority to establish volumes lower than the statutory volumes required by EISA, but the EPA's interpretation of its waiver authority, as well as its implementation of the RFS, has been subject to numerous court challenges. Additional lawsuits have been filed by refiners attempting to move the point of compliance for the RFS from refiners to importers and blenders of fuels. We cannot predict the outcome of these matters or whether they may result in increased RFS compliance costs. There also continues to be a shortage of advanced biofuel production resulting in increased difficulties meeting RFS mandates. As a result, we may be unable to blend sufficient quantities of ethanol and biodiesel to meet our requirements and, therefore, may have to purchase an increasing number of RINs. It is not possible at this time to predict with certainty what those volumes or costs may be, but given the potential increase in volumes and the volatile price of RINs, increases in renewable volume requirements could have an adverse impact on our results of operations.

Finally, while there is no current regulatory standard that authenticates RINs that may be purchased on the open market from third parties, we believe that the RINs we purchase are from reputable sources, are valid and serve to demonstrate compliance with applicable RFS requirements. However, if any of the RINs purchased by us on the open market are subsequently found by the EPA to be invalid, we could secure significant costs, penalties, or other liabilities in connection with replacing any invalid RINs and resolving any enforcement action brought by the EPA.

In April 2014, the EPA promulgated the Tier 3 Motor Vehicle Emission and Fuel Standards, which requires a reduction in annual average gasoline sulfur content from 30 ppm to 10 ppm. These new requirements, other CAA requirements, and other presently existing or future environmental regulations may cause us to make substantial capital expenditures and purchase sulfur credits at significant cost to enable our refineries to produce products that meet applicable requirements.

Climate Change - In recent years, various legislative and regulatory measures to address climate change and greenhouse gas ("GHG") emissions (including carbon dioxide, methane and nitrous oxides) have been discussed or implemented. They include proposed and enacted federal regulation and state actions to develop statewide, regional or nationwide programs designed to control and reduce GHG emissions from fixed sources, such as our refineries, as well as power plants, mobile transportation sources and fuels. Measures to date have included cap and trade programs, carbon taxes, vehicle efficiency standards and low carbon fuel standards. Although it is not possible to predict the requirements of any GHG legislation that may be enacted, any laws or regulations that may be adopted to restrict or reduce GHG emissions will likely require us to incur increased operating and capital costs. In August 2015, the EPA finalized the “Clean Power Plan” requiring states to reduce carbon dioxide emissions from coal fired power plants that will likely result in a combination of plant closures, switching to renewable energy and natural gas, and demand reduction. However, the Clean Power Plan is currently being litigated in various courts, and the U.S. Supreme Court has stayed implementation of the rule pending the outcome of those judicial challenges. In October 2017, the EPA proposed to repeal the Clean Power Plan, and on December 18, 2017, the EPA issued a notice seeking comments on whether to promulgate a replacement rule. If upheld, this rule would not directly affect our operations, but, to the extent it or a similar rule is fully implemented, it could result in increased power costs for our refineries in future years.

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EPA rules require us to report GHG emissions from our refinery operations and consumer use of fuel products produced at our refineries on an annual basis. While the cost of compliance with the reporting rule is not material, data gathered under the rule may be used in the future to support additional regulation of GHG. Moreover, the EPA directly regulates GHG emissions from refineries and other major sources through the Prevention of Significant Deterioration ("PSD") and Federal Operating Permit programs and may require Best Available Control Technology ("BACT") for GHG emissions above a certain threshold if emissions of other pollutants would otherwise require PSD permitting. While this does not impose any limits or controls on GHG emissions from current operations, future projects or operational changes that increase GHG emissions, such as capacity increases, may be subject to emission limits or technological requirements pertaining to GHG emissions, such as BACT.

Severe limitations on GHG emissions could also adversely affect demand for the gasoline that we produce. Recently, activists concerned about the potential effects of climate change have directed their attention at sources of funding for fossil-fuel energy companies, which has resulted in certain financial institutions, funds and other sources of capital restricting or eliminating their investment in oil and natural gas activities. Ultimately, this could make it more difficult to secure funding for exploration and production activities and result in decreased production of oil, which indirectly could have an adverse impact on our operations. Notwithstanding potential risks related to climate change, the International Energy Agency estimates that global energy demand will continue to rise and will not peak until after 2040 and that oil and natural gas will continue to represent a substantial percentage of global energy use over that time. Finally, it should be noted that some scientists have concluded that increasing concentrations of GHGs in the Earth's atmosphere may produce climate changes that have significant physical effects, such as increased frequency and severity of storms, floods and other extreme weather events; if any such effects were to occur, they could have an adverse effect on our operations.

Water Discharges - Our operations are also subject to the Federal Clean Water Act ("CWA"), the Federal Safe Drinking Water Act ("SDWA") and comparable state and local requirements. The CWA, the SDWA and analogous laws prohibit any discharge into surface waters, ground waters, injection wells and publicly-owned treatment works except in conformance with legal authorization, such as pre-treatment permits and National Pollutant Discharge Elimination System ("NPDES") permits, issued by federal, state and local governmental agencies. The EPA commenced a study from 2015-2017 related to the discharges of metals and dioxin from petroleum refining operations and wastewater discharges from refineries in connection with the consideration of new effluent limitation guidelines that would be incorporated into refinery sector NPDES permits. To date, the EPA has not proposed any new effluent limitation guidelines applicable to our operations, but future rulemakings related to this issue could require us to incur increased costs related to the treatment of wastewater resulting from our operations.

The CWA also regulates filling or discharges to wetlands and other "Waters of the U.S." In 2015, the EPA, in conjunction with the U.S. Army Corps of Engineers (the "Corps"), issued a final rule regarding the definition of "Waters of the U.S.," which expanded the regulatory reach of the existing CWA regulations. The final rule is currently stayed pending litigation in various courts, and the EPA has expressed its intent to repeal and potentially replace the rule. If the rule or any replacement rule expands the scope of the CWA's jurisdiction, we could face increased costs and delays with respect to obtaining permits for discharges resulting from our operations.

Hazardous Substances and Wastes - We generate wastes that may be subject to the Resource Conservation and Recovery Act and comparable state and local requirements. The EPA and various state agencies have limited the approved methods of disposal for certain hazardous and non-hazardous wastes. Although the EPA is currently working on several rulemakings that could impact how our refineries manage various waste streams, it does not appear that these rules will significantly impact our refineries.

The Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), also known as "Superfund," imposes strict, and under certain circumstances, joint and several liability on certain classes of persons who are considered to be responsible for the cost of cleaning up hazardous substances that have been released into the environment and for damages to natural resources. These persons include current and former owners or operators of property where a release has occurred, and any persons who disposed of, or arranged for the transport or disposal of, hazardous substances at the property. In the course of our historical operations, as well as in our current operations, we have generated waste, some of which falls within the statutory definition of a “hazardous substance” and some of which may have been disposed of at sites that may be subject to cleanup and cost recovery actions under CERCLA in the future. Similarly, locations now owned or operated by us, where third parties have disposed such hazardous substances in the past, may also be subject to cleanup and cost recovery actions under CERCLA. Some states have enacted laws similar to CERCLA which impose similar responsibilities and liabilities on responsible parties. It is also not uncommon for neighboring landowners and other third parties to file claims under state law for personal injury and property damage allegedly caused by hazardous substances or other pollutants released into the environment.

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Oil Pollution Act - The Oil Pollution Act of 1990 (“OPA”) and regulations thereunder generally subject owners and operators of facilities to strict, joint and several liability for all containment and cleanup costs, natural resource damages, and potential governmental oversight costs arising from oil spills into the waters of the U.S. The OPA also imposes ongoing requirements on a responsible party, including the preparation of oil spill response plans and proof of financial responsibility to cover environmental cleanup and restoration costs that could be incurred in connection with an oil spill.

Our Canadian assets and operations are also required to comply with various Canadian federal, provincial and municipal regulations. The regulations are in many cases conceptually similar to those described above for our U.S. operations. The principal legislation affecting our Canadian operations is the Canadian Environmental Protection Act and its regulations at a federal level and various provincial statutes and regulations such as the Ontario Environmental Protection Act, the Ontario Occupational Health and Safety Act and the Ontario Water Resources Act. All these laws contain broad prohibitions against causing harm to air, land, water, people or any other living organism and in many cases contain detailed prescriptive rules governing many aspects of our operations.

As is the case with all companies engaged in industries similar to ours, we face potential exposure to future claims and lawsuits involving environmental matters. These matters include soil and water contamination, air pollution, GHG emissions, personal injury and property damage allegedly caused by substances that we manufactured, handled, used, released or disposed. We currently have environmental remediation projects that relate to recovery, treatment and monitoring activities resulting from past releases of refined product and crude oil into the environment. As of December 31, 2017, we had an accrual of $103.7 million related to such environmental liabilities.

We are and have been the subject of various local, state, provincial, federal and private proceedings and inquiries relating to compliance with environmental regulations and conditions, including those discussed above. Compliance with current and future environmental regulations is expected to require additional expenditures, including expenditures for investigation and remediation, which may be significant, at our refineries and at pipeline transportation facilities. To the extent that future expenditures for these purposes are material and can be reasonably determined, these costs are disclosed and accrued, if applicable.

Occupational Health and Safety - Our operations are subject to various laws and regulations relating to occupational health and safety, including the Occupational Safety and Health Act (“OSHA”) and comparable state statutes. We maintain a comprehensive safety program, including mechanical integrity and safety-related maintenance programs and training, to ensure compliance with all applicable laws and regulations to protect the safety of our workers and the public. Our operations are also subject to OSHA Process Safety Management (“PSM”) regulations and EPA Risk Management Plan (“RMP”) regulations, both of which are designed to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals. In January 2017, the EPA revised the RMP requirements for incident investigation and accident history reporting, emergency preparedness, and the performance process hazard analyses and third party compliance audits. In June 2017, the EPA issued a stay of the revised RMP requirements until 2019, which was immediately challenged by environmental groups, and a final decision remains pending. However, many of the revised requirements do not become effective until 2021. Also in January 2017, OSHA announced changes to its National Emphasis Program, which specifically identified oil refineries as facilities for increased inspections and instructed inspectors to use data gathered from EPA RMP inspections to identify refiners for additional PSM inspections. Compliance with applicable state and federal occupational health and safety laws and regulations, as well as environmental regulations, has required, and continues to require, substantial expenditures.

Occupational health and environmental legislation, regulations and regulatory programs change frequently. We cannot predict what additional occupational health and environmental legislation or regulations will be enacted or become effective in the future or how existing or future laws or regulations will be administered or interpreted with respect to our operations. Compliance with more stringent laws or regulations or adverse changes in the interpretation of existing laws or regulations by government agencies could have an adverse effect on our financial position and the results of our operations and could require substantial expenditures for the installation and operation of systems and equipment that we do not currently possess.

Insurance

Our operations are subject to hazards of operations, including fire, explosion and weather-related perils. We maintain various insurance coverages, including business interruption insurance, subject to certain deductibles. We are not fully insured against certain risks because such risks are not fully insurable, coverage is unavailable, or premium costs, in our judgment, do not justify such expenditures.

We have a risk management oversight committee consisting of members from our senior management. This committee oversees our risk enterprise program, monitors our risk environment and provides direction for activities to mitigate identified risks that may adversely affect the achievement of our goals.

Item 1A. Risk Factors

Investing in us involves a degree of risk, including the risks described below. Our operating results have been, and will continue to be, affected by a wide variety of risk factors, many of which are beyond our control, that could have adverse effects on profitability during any particular period. You should carefully consider the following risk factors together with all of the other information included in this Annual Report on Form 10-K, including the financial statements and related notes, when deciding to invest in us. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially and adversely affect our business operations. If any of the following risks were to actually occur, our business, financial condition or results of operations could be materially and adversely affected.

The headings provided in this Item 1A. are for convenience and reference purposes only and shall not affect or limit the extent or interpretation of the risk factors.

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

Pursuant to the 2007 Energy Independence and Security Act, the EPA promulgated the RFS regulations reflecting the increased volume of renewable fuels mandated to be blended into the nation's fuel supply. The regulations, in part, require refiners to add annually increasing amounts of “renewable fuels” to their petroleum products or purchase credits, known as RINs, in lieu of such blending. We currently purchase RINs for some fuel categories on the open market in order to comply with the quantity of renewable fuels we are required to blend under the RFS regulations. Recently, due in part to the nation's fuel supply approaching the “blend wall” (the 10% ethanol limit prescribed by most automobile warranties), the price of RINs has been extremely volatile with the price dramatically increasing in recognition of the decrease in RINs availability. While we cannot predict the future prices of RINs, the costs to obtain the necessary number of RINs could be material. If we are unable to pass the costs of compliance with the RFS regulations on to our customers, if sufficient RINs are unavailable for purchase, if we have to pay a significantly higher price for RINs or if we are otherwise unable to meet the RFS mandates, our financial condition and results of operations could be adversely affected.

In addition, the RFS regulations are highly complex and evolving, requiring us to periodically update our compliance systems. The RFS regulations require the EPA to determine and publish the applicable annual volume and percentage standards for each compliance year by November 30 for the forthcoming year, and such blending percentages could be higher or lower than amounts estimated and accrued for in our consolidated financial statements. The future cost of RINs is difficult to estimate until such time as the EPA finalizes the applicable standards for the forthcoming compliance year. Moreover, in addition to increased price volatility in the RIN market, there have been multiple instances of RINs fraud occurring in the marketplace over the past several years. The EPA has initiated several enforcement actions against refiners who purchase fraudulent RINs, resulting in substantial costs to the refiner. We cannot predict with certainty our exposure to increased RINs costs in the future, nor can we predict the extent by which costs associated with RFS regulations will impact our future results of operations.

The prices of crude oil and refined products materially affect our profitability, and are dependent upon many factors that are beyond our control, including general market demand and economic conditions, seasonal and weather-related factors, regional and grade differentials and governmental regulations and policies.

Among these factors is the demand for crude oil and refined products, which is largely driven by the conditions of local and worldwide economies as well as by weather patterns and the taxation of these products relative to other energy sources. Governmental regulations and policies, particularly in the areas of taxation, energy and the environment, also have a significant impact on our activities. Operating results can be affected by these industry factors, product and crude pipeline capacities, crude oil differentials (including regional and grade differentials), changes in transportation costs, accidents or interruptions in transportation, competition in the particular geographic areas that we serve, and factors that are specific to us, such as the success of particular marketing programs and the efficiency of our refinery operations. The demand for crude oil and refined products can also be reduced due to a local or national recession or other adverse economic condition that results in lower spending by businesses and consumers on gasoline and diesel fuel, higher gasoline prices due to higher crude oil prices, a shift by consumers to more fuel-efficient vehicles or alternative fuel vehicles (such as ethanol or wider adoption of gas/electric hybrid vehicles), or an increase in vehicle fuel economy, whether as a result of technological advances by manufacturers, legislation mandating or encouraging higher fuel economy or the use of alternative fuel.

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We do not produce crude oil and must purchase all our crude oil, the price of which fluctuates based upon worldwide and local market conditions. Our profitability depends largely on the spread between market prices for refined petroleum products and crude oil prices. This margin is continually changing and may fluctuate significantly from time to time. Crude oil and refined products are commodities whose price levels are determined by market forces beyond our control. For example, the reversal of certain existing pipelines or the construction of certain new pipelines transporting additional crude oil or refined products to markets that serve competing refineries could affect the market dynamic that has allowed us to take advantage of favorable pricing. Also, in December 2015, the U.S. Congress lifted the ban on the ability of producers to export domestic crude oil. This could potentially impact crack spreads and price differentials between domestic and foreign crude oils. A deterioration of crack spreads or price differentials between domestic and foreign crude oils could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Additionally, due to the seasonality of refined products markets and refinery maintenance schedules, results of operations for any particular quarter of a fiscal year are not necessarily indicative of results for the full year and can vary year to year in the event of unseasonably cool weather in the summer months and / or unseasonably warm weather in the winter months in the markets in which we sell our petroleum products. In general, prices for refined products are influenced by the price of crude oil. Although an increase or decrease in the price for crude oil may result in a similar increase or decrease in prices for refined products, there may be a time lag in the realization of the similar increase or decrease in prices for refined products. The effect of changes in crude oil prices on operating results, therefore, depends in part on how quickly refined product prices adjust to reflect these changes. A substantial or prolonged increase in crude oil prices without a corresponding increase in refined product prices, a substantial or prolonged decrease in refined product prices without a corresponding decrease in crude oil prices, or a substantial or prolonged decrease in demand for refined products could have a significant negative effect on our earnings and cash flow. Also, crude oil supply contracts are generally short-term contracts with market-responsive pricing provisions. We purchase our refinery feedstocks weeks before manufacturing and selling the refined products. Price level changes during the period between purchasing feedstocks and selling the manufactured refined products from these feedstocks could have a significant effect on our financial condition and results of operations. Also, our crude oil and refined products inventories are valued at the lower of cost or market under the last-in, first-out (“LIFO”) inventory valuation methodology. If the market value of our inventory were to decline to an amount less than our LIFO cost, we would record a write-down of inventory and a non-cash charge to cost of products sold even when there is no underlying economic impact at that point in time. Continued volatility in crude oil and refined products prices could result in lower of cost or market inventory charges in the future, or in reversals reducing cost of products sold in subsequent periods should prices recover. For example, we recorded a non-cash decrease to cost of products sold in the amount of \$108.7 million and \$291.9 million for the years ended December 31, 2017 and 2016, respectively.

A material decrease in the supply of crude oil or other raw materials available to our refineries could significantly reduce our production levels and negatively affect our operations.

To maintain or increase production levels at our refineries, we must continually contract for crude oil supplies from third parties. A material decrease in crude oil production from the fields that supply our refineries, as a result of depressed commodity prices, lack of drilling activity, natural production declines or otherwise, could result in a decline in the volume of crude oil available to our refineries. In addition, any prolonged disruption of a significant pipeline that is used in supplying crude oil to our refineries or the potential operation of a new, converted or expanded crude oil pipeline that transports crude oil to other markets could result in a decline in the volume of crude oil available to our refineries. Such an event could result in an overall decline in volumes of refined products processed at our refineries and therefore a corresponding reduction in our cash flow. In addition, the future growth of our operations will depend in part upon whether we can contract for additional supplies of crude oil at a greater rate than the rate of natural decline in our currently connected supplies. If we are unable to secure additional crude oil supplies of sufficient quality or crude pipeline expansion to our refineries, we will be unable to take full advantage of current and future expansion of our refineries' production capacities.

For certain raw materials and utilities used by our refineries, there are a limited number of suppliers and, in some cases, the supplies are specific to the particular geographic region in which a facility is located. It is also common in the refining industry for a facility to have a sole, dedicated source for its utilities, such as steam, electricity, water and gas. Having a sole or limited number of suppliers may limit our negotiating power, particularly in the case of rising raw material costs. Any new supply agreements we enter into may not have terms as favorable as those contained in our current supply agreements.

Additionally, there is growing concern over the reliability of water sources. The decreased availability or less favorable pricing for water as a result of population growth, drought or regulation could negatively impact our operations.

If our raw material, utility or water supplies were disrupted, our businesses may incur increased costs to procure alternative supplies or incur excessive downtime, which would have a direct negative impact on our operations.

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We may not be able to successfully execute our business strategies to grow our business. Further, if we are unable to complete capital projects at their expected costs or in a timely manner, if we are unsuccessful in integrating the operations of assets we acquire, or if the market conditions assumed in our project economics deteriorate, our financial condition, results of operations, or cash flows could be materially and adversely affected.

One of the ways we may grow our business is through the construction of new refinery processing units (or the purchase and refurbishment of used units from another refinery) and the expansion of existing ones. Projects are generally initiated to increase the yields of higher-value products, increase the amount of lower cost crude oils that can be processed, increase refinery production capacity, meet new governmental requirements, or maintain the operations of our existing assets. Additionally, our growth strategy includes projects that permit access to new and/or more profitable markets. The construction process involves numerous regulatory, environmental, political, and legal uncertainties, most of which are not fully within our control, including:

- third party challenges to, denials, or delays with respect to the issuance of requisite regulatory approvals and/or obtaining or renewing permits, licenses, registrations and other authorizations;
- societal and political pressures and other forms of opposition;
- compliance with or liability under environmental regulations;
- unplanned increases in the cost of construction materials or labor;
- disruptions in transportation of modular components and/or construction materials;
- severe adverse weather conditions, natural disasters, or other events (such as equipment malfunctions, explosions, fires, spills) affecting our facilities, or those of vendors and suppliers;
- shortages of sufficiently skilled labor, or labor disagreements resulting in unplanned work stoppages;
- market-related increases in a project's debt or equity financing costs; and/or
- nonperformance or force majeure by, or disputes with, vendors, suppliers, contractors, or sub-contractors involved with a project.

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 as well as affect our ability to supply certain products we make. In addition, our revenues may not increase immediately upon the expenditure of funds on a particular project. For instance, if we build a new refinery processing unit, the construction will occur over an extended period of time and we will not receive any material increases in revenues until after completion of the project. Moreover, we may construct facilities to capture anticipated future growth in demand for refined products in a region in which such growth does not materialize. As a result, new capital investments may not achieve our expected investment return, which could adversely affect our financial condition or results of operations.

Our forecasted internal rates of return are also based upon our projections of future market fundamentals which are not within our control, including changes in general economic conditions, available alternative supply and customer demand.

An additional component of our growth strategy is to selectively acquire complementary assets or businesses for our refining operations in order to increase earnings and cash flow. Our ability to do so will be dependent upon a number of factors, including our ability to identify attractive acquisition candidates, consummate acquisitions on favorable terms, successfully integrate acquired assets and obtain financing to fund acquisitions and to support our growth, and other factors beyond our control. Risks associated with acquisitions include those relating to:

- diversion of management time and attention from our existing business;
- challenges in managing the increased scope, geographic diversity and complexity of operations and inefficiencies that may result therefrom;

- difficulties in integrating the financial, technological and management standards, processes, procedures and controls of an acquired business with those of our existing operations;
- liability for known or unknown environmental conditions or other contingent liabilities not covered by indemnification or insurance;
- greater than anticipated expenditures required for compliance with environmental or other regulatory standards or for investments to improve operating results;
- difficulties or delays in achieving anticipated operational improvements or benefits;
- incurrence of additional indebtedness to finance acquisitions or capital expenditures relating to acquired assets; and
- issuance of additional equity, which could result in further dilution of the ownership interest of existing stockholders.

Any acquisitions that we do consummate may have adverse effects on our business and operating results.

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Currency fluctuations or devaluations may impact our operating results.

Fluctuations or devaluations in foreign currencies relative to the U.S. dollar can impact our revenue and our costs of doing business. Most of our products and services are sold through contracts denominated in U.S. dollars; however, some of our revenue, local expenses and manufacturing costs are incurred in local currencies and, therefore, changes in the exchange rates between the U.S. dollar and foreign currencies can increase or decrease our revenue and expenses reported in U.S. dollars and may impact our results of operations. Any significant change in the value of the currencies of the countries in which we do business against the U.S. dollar could affect our competitiveness and control of our cost structure, which could have a material adverse effect on our business, financial condition and results of operations.

We are exposed to fluctuations in foreign currency exchange rates, particularly with respect to the Canadian dollar, the euro and the Chinese renminbi. We recognize foreign currency transaction gains and losses arising from our operations in the period incurred. As a result, currency fluctuations between the U.S. dollar and the currencies in which we do business have caused and will continue to cause foreign currency transaction and translation gains and losses, which could be material. We cannot predict the effects of exchange rate fluctuations upon our future operating results because of the number of currencies involved, the variability of currency exposures and the potential volatility of currency exchange rates

Our business is subject to the risks of international operations.

We derive a portion of our revenue and earnings from international operations. Compliance with applicable U.S. and foreign laws and regulations, such as import and export requirements, anti-corruption laws, foreign exchange controls and cash repatriation restrictions, data privacy requirements, environmental laws, labor laws and anti-competition regulations, increases the cost of doing business in foreign jurisdictions. Although we have implemented policies and procedures to comply with these laws and regulations, a violation by any of our employees, contractors or agents could nevertheless occur. In some cases, compliance with the laws and regulations of one country could violate the laws and regulations of another country. Violations of these laws and regulations could materially adversely affect our company's brand, international growth efforts and business.

We may incur significant costs to comply with new or changing environmental, energy, health and safety laws and regulations, and face potential exposure for environmental matters.

Our refinery and pipeline operations are subject to federal, state and local laws regulating, among other things, the generation, storage, handling, use, transportation and distribution of petroleum and hazardous substances by pipeline, truck, rail and barge, the emission and discharge of materials into the environment, waste management, and characteristics and composition of gasoline and diesel fuels, and other matters otherwise relating to the protection of the environment. In addition, as a result of our recent acquisition of PCLI, we have manufacturing and distribution operations in Canada that are subject to Canadian national and provincial environmental laws and regulations and similar laws in other foreign countries. Permits or other authorizations are required under these laws for the operation of our refineries, pipelines and related operations, and these permits and authorizations are subject to revocation, modification and renewal or may require operational changes, which may involve significant costs. Furthermore, a violation of permit conditions or other legal or regulatory requirements could result in substantial fines, criminal sanctions, permit revocations, injunctions, and/or refinery shutdowns. In addition, major modifications of our operations due to changes in the law could require changes to our existing permits or expensive upgrades to our existing pollution control equipment, which could have a material adverse effect on our business, financial condition, or results of operations. For example, in October 2015, the EPA lowered the NAAQS for ozone from 75 to 70 parts per billion for both the 8-hour primary and secondary standards. The EPA published a final rule in November 2017 that issued area designations with respect to ground level ozone for approximately 85% of the U.S. counties as either “attainment/unclassifiable” or “unclassifiable.” In December 2017, the EPA responded to states' preliminary non-attainment designations, and expects to issue final non-attainment designations during the first half of 2018. State implementation of the revised NAAQS could result in stricter permitting requirements, delay or prohibit our ability to obtain such permits, and result in increased expenditures for pollution control equipment, the costs of which could be significant. Also, in February 2016, a new EPA rule became effective that amends three refinery standards already in effect, imposing additional or, in some cases, new emission control requirements on subject refineries. The final rule requires, among other things, benzene monitoring at the refinery fence line and submittal of fence line monitoring data to the EPA on a quarterly basis; upgraded storage tank controls requirements, including new applicability thresholds; enhanced performance requirements for flares, continuous monitoring of flares and pressure release devices and analysis and remedy of flare release events; and compliance with emissions standards for delayed coking units. Refineries have up to three years from the effective date of the final rule to come into compliance with certain requirements of the rule, such as the performance requirements for flares, while other aspects of the rule require compliance to be achieved at a sooner date. For example, the rule's fence line monitoring requirements became effective January 31, 2018. In July 2016, the EPA issued a finale rule providing refiners an additional 18 months to comply with a small subset of the rules related to air emissions resulting from startup, shutdown and maintenance events. In December 2016, the EPA granted petitions for reconsideration from industry and environmental organizations on aspects of the rule related to work practice standards

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for certain process units and equipment, as well as fence line monitoring requirements. To date, EPA has not published revised rules. These new rules, as well as subsequent rulemaking under the CAA or similar laws, or new agency interpretations of existing laws and regulations, may necessitate additional expenditures in future years and result in increased costs on our operations. Compliance with applicable environmental laws, regulations and permits will continue to have an impact on our operations, results of our operations and capital requirements.

As is the case with all companies engaged in industries similar to ours, we face potential exposure to future claims and lawsuits involving environmental matters. The matters include, but are not limited to, soil, groundwater and waterway contamination, air pollution, personal injury and property damage allegedly caused by substances which we manufactured, handled, used, released or disposed.

We are and have been the subject of various local, state, provincial, federal and private proceedings relating to environmental regulations, conditions and inquiries. Current and future environmental regulations are expected to require additional expenditures, including expenditures for investigation and remediation, which may be significant, at our facilities. To the extent that future expenditures for these purposes are material and can be reasonably determined, these costs are disclosed and accrued.

Our operations are also subject to various laws and regulations relating to occupational health and safety. We maintain safety, training and maintenance programs as part of our ongoing efforts to ensure compliance with applicable laws and regulations but cannot guarantee that these efforts will always be successful. Compliance with applicable health and safety laws and regulations has required and continues to require substantial expenditures. Failure to appropriately manage occupational health and safety risks associated with our business could also adversely impact our employees, communities, stakeholders, reputation and results of operations.

The costs of environmental and safety regulations are already significant and compliance with more stringent laws or regulations or adverse changes in the interpretation of existing regulations by government agencies could have an adverse effect on the financial position and the results of our operations and could require substantial expenditures for the installation and operation of systems and equipment that we do not currently possess.

From time to time, new federal energy policy legislation is enacted by the U.S. Congress or the Federal or Provincial Governments of Canada. For example, in December 2007, the U.S. Congress passed the Energy Independence and Security Act, which, among other provisions, mandates annually increasing levels for the use of renewable fuels such as ethanol, commencing in 2008 and escalating for 15 years, as well as increasing energy efficiency goals, including higher fuel economy standards for motor vehicles, among other steps. In Canada, fuel content legislation also exists at the federal and provincial level. These statutory mandates may have the impact over time of offsetting projected increases in the demand for refined petroleum products in certain markets, particularly gasoline. In the near term, the new renewable fuel standard presents ethanol production and logistics challenges for both the ethanol and refining industries and may require additional capital expenditures or expenses by us to accommodate increased ethanol use. Other legislative changes may similarly alter the expected demand and supply projections for refined petroleum products in ways that cannot be predicted.

For additional information on regulations and related liabilities or potential liabilities affecting our business, see “Regulation” under Items 1 and 2, “Business and Properties,” and Item 3, “Legal Proceedings.”

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

The EPA has determined that emissions of carbon dioxide, methane and other greenhouse gas emissions, or “GHGs,” present an endangerment to public health and the environment because emissions of such gases are, according to the

EPA, contributing to warming of the earth's atmosphere and other climatic changes. Based on these findings, the EPA has begun adopting and implementing regulations to restrict emissions of GHGs under existing provisions of the federal CAA. For example, the EPA adopted rules that require certain large stationary sources to obtain permits to authorize emissions of GHGs. The EPA has also adopted rules requiring the reporting of GHG emissions from specified large GHG emission sources in the United States, including petroleum refineries, on an annual basis. Both the EPA and Environment and Climate Change Canada have adopted regulations that limit GHG emissions from automobiles and light-duty trucks, which may result in a reduction in demand for the refined products that we produce.

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Although the U.S. Congress has previously considered legislation to reduce GHG emissions, federal legislative action appears unlikely at this time. Meanwhile, many states have pursued or are considering their own initiatives designed to reduce GHG emissions, such as cap and trade programs, carbon taxes, low carbon fuel standards, and vehicle efficiency standards. Similar measures are being pursued in Canada at the federal and provincial level, and the provinces of Quebec, Ontario, and Alberta have all implemented either cap and trade programs or levied carbon taxes.

The adoption of legislation or regulatory programs to reduce emissions of GHGs could require us to incur increased operating costs, such as costs to purchase and operate emissions control systems, to acquire emissions allowances or comply with new regulatory or reporting requirements. Any such legislation or regulatory programs could also increase the cost of consuming, and thereby reduce demand for, the refined products that we produce. Consequently, legislation and regulatory programs to reduce emissions of GHGs could have an adverse effect on our business, financial condition and results of operations.

Our operations are subject to catastrophic losses, operational hazards and unforeseen interruptions for which we may not be adequately insured.

Our operations are subject to catastrophic losses, operational hazards and unforeseen interruptions such as natural disasters, adverse weather, accidents, maritime disasters (including those involving marine vessels/terminals), fires, explosions, hazardous materials releases, cyber-attacks, power failures, mechanical failures and other events beyond our control. These events could result in an injury, loss of life, property damage or destruction, as well as a curtailment or an interruption in our operations and may affect our ability to meet marketing commitments.

We may not be able to maintain or obtain insurance of the type and amount we desire at reasonable rates and exclusions from coverage may limit our ability to recover the amount of the full loss in all situations. As a result of market conditions, premiums and deductibles for certain of our insurance policies could increase. In some instances, certain insurance could become unavailable or available only for reduced amounts of coverage. We are not fully insured against all risks incident to our business and therefore, we self-insure certain risks. If any refinery were to experience an interruption in operations, earnings from the refinery could be materially adversely affected (to the extent not recoverable through insurance) because of lost production and repair costs.

The energy industry is highly capital intensive, and the entire or partial loss of individual facilities can result in significant costs to both industry companies, such as us, and their insurance carriers. In recent years, several large energy industry claims have resulted in significant increases in the level of premium costs and deductible periods for participants in the energy industry. As a result of large energy industry claims, insurance companies that have historically participated in underwriting energy-related facilities may discontinue that practice or demand significantly higher premiums or deductible periods to cover these facilities. If significant changes in the number or financial solvency of insurance underwriters for the energy industry occur, or if other adverse conditions over which we have no control prevail in the insurance market, we may be unable to obtain and maintain adequate insurance at reasonable cost. In addition, we cannot assure you that our insurers will renew our insurance coverage on acceptable terms, if at all, or that we will be able to arrange for adequate alternative coverage in the event of non-renewal. Further, our underwriters could have credit issues that affect their ability to pay claims. If a significant accident or event occurs that is self-insured or not fully insured, it could have a material adverse effect on our business, financial condition and results of operations.

An impairment of our long-lived assets or goodwill could reduce our earnings or negatively impact our financial condition and results of operations.

An impairment of our long-lived assets or goodwill could reduce our earnings or negatively impact our results of operations and financial condition. We continually monitor our business, the business environment and the performance of our operations to determine if an event has occurred that indicates that a long-lived asset or goodwill may be impaired. If a triggering event occurs, which is a determination that involves judgment, we may be required to utilize cash flow projections to assess our ability to recover the carrying value based on the ability to generate future cash flows. We may also conduct impairment testing based on both the guideline public company and guideline transaction methods. Our long-lived assets and goodwill impairment analyses are sensitive to changes in key assumptions used in our analysis, estimates of future crack spreads, forecasted production levels, operating costs and capital expenditures. If the assumptions used in our analysis are not realized, it is possible a material impairment charge may need to be recorded in the future. We cannot accurately predict the amount and timing of any additional impairments of long-lived assets or goodwill in the future.

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As market prices for refined products and market prices for crude oil continue to fluctuate, we will need to continue to evaluate the carrying value of our refinery reporting units. During the year ended December 31, 2016, we recorded goodwill and long-lived asset impairment charges of $309.3 million and $344.8 million, respectively, on the carrying value of our Cheyenne Refinery. A reasonable expectation exists that future deterioration in gross margins could result in an impairment of goodwill and the long-lived assets of the El Dorado reporting unit at some point in the future. Any additional impairment charges that we may take in the future could be material to our results of operations and financial condition.

Competition in the refining and marketing industry is intense, and an increase in competition in the markets in which we sell our products could adversely affect our earnings and profitability.

We compete with a broad range of refining and marketing companies, including certain multinational oil companies. Because of their geographic diversity, larger and more complex refineries, integrated operations and greater resources, some of our competitors may be better able to withstand volatile market conditions, to obtain crude oil in times of shortage and to bear the economic risks inherent in all areas of the refining industry.

We are not engaged in petroleum exploration and production activities and do not produce any of the crude oil feedstocks used at our refineries. We do not have a retail business and therefore are dependent upon others for outlets for our refined products. Certain of our competitors, however, obtain a portion of their feedstocks from company-owned production and have retail outlets. Competitors that have their own production or extensive retail outlets, with brand-name recognition, are at times able to offset losses from refining operations with profits from producing or retailing operations, and may be better positioned to withstand periods of depressed refining margins or feedstock shortages.

In recent years there have been several refining and marketing consolidations or acquisitions between entities competing in our geographic market. These transactions could increase the future competitive pressures on us.

The markets in which we compete may be impacted by competitors' plans for expansion projects and refinery improvements that could increase the production of refined products in our areas of operation and significantly affect our profitability.

Also, the potential operation of new or expanded refined product transportation pipelines, or the conversion of existing pipelines into refined product transportation pipelines, could impact the supply of refined products to our existing markets and negatively affect our profitability.

In addition, we compete with other industries that provide alternative means to satisfy the energy and fuel requirements of our industrial, commercial and individual consumers. The more successful these alternatives become as a result of governmental regulations, technological advances, consumer demand, improved pricing or otherwise, the greater the impact on pricing and demand for our products and our profitability. There are presently significant governmental and consumer pressures to increase the use of alternative fuels in the United States.

A disruption to or proration of the refined product distribution systems we utilize could negatively impact our profitability.

We utilize various common carrier or other third party pipeline systems to deliver our products to market. The key systems utilized by the Cheyenne, El Dorado, Navajo, Woods Cross, and Tulsa Refineries are Rocky Mountain, NuStar Energy, SFPP and Plains, Chevron, and Magellan, respectively. All five refineries also utilize systems owned by HEP. If these key pipelines or their associated tanks and terminals become inoperative or decrease the capacity available to us, we may not be able to sell our product, or we may be required to hold our product in inventory or supply products to our customers through an alternative pipeline or by rail or additional tanker trucks from the refinery, all of which could increase our costs and result in a decline in profitability.

We may be subject to information technology system failures, network disruptions and breaches in data security.

Information technology system failures, network disruptions (whether intentional by a third party or due to natural disaster), breaches of network or data security, or disruption or failure of the network system used to monitor and control pipeline operations could disrupt our operations by impeding our processing of transactions, our ability to protect customer or company information and our financial reporting. Our computer systems, including our back-up systems, could be damaged or interrupted by power outages, computer and telecommunications failures, computer viruses, internal or external security breaches, events such as fires, earthquakes, floods, tornadoes and hurricanes, and/or errors by our employees. There can be no assurance that a system failure or data security breach will not have a material adverse effect on our financial condition and results of operations.

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We may not be able to obtain funding on acceptable terms or at all because of volatility and uncertainty in the credit and capital markets. This may hinder or prevent us from meeting our future capital needs.

The domestic and global financial markets and economic conditions are disrupted and volatile from time to time due to a variety of factors, including low consumer confidence, high unemployment, geoeconomic and geopolitical issues, weak economic conditions and uncertainty in the financial services sector. In addition, the fixed-income markets have experienced periods of extreme volatility, which negatively impacted market liquidity conditions. Recently, the equity and debt markets for many energy industry companies have been adversely affected by low oil prices. As a result, the cost of raising money in the debt and equity capital markets has increased substantially at times while the availability of funds from these markets diminished significantly. In particular, as a result of concerns about the stability of financial markets generally and the solvency of lending counterparties specifically, the cost of obtaining money from the credit markets may increase as many lenders and institutional investors increase interest rates, enact tighter lending standards, refuse to refinance existing debt on similar terms or at all and reduce, or in some cases cease to provide, funding to borrowers. In addition, lending counterparties under any existing revolving credit facility and other debt instruments may be unwilling or unable to meet their funding obligations, or we may experience a decrease in our capacity to issue debt or obtain commercial credit or a deterioration in our credit profile, including a rating agency lowering or withdrawing of our credit ratings if, in its judgment, the circumstances warrant. Due to these factors, we cannot be certain that new debt or equity financing will be available on acceptable terms. If funding is not available when needed, or is available only on unfavorable terms, we may be unable to meet our obligations as they come due or we may be required to sell assets. Moreover, without adequate funding, we may be unable to execute our growth strategy, complete future acquisitions or construction projects, take advantage of other business opportunities or respond to competitive pressures, comply with regulatory requirements, or meet our short-term or long-term working capital requirements, any of which could have a material adverse effect on our revenues and results of operations. Failure to comply with regulatory requirements in a timely manner or meet our short-term or long-term working capital requirements could subject us to regulatory action.

We depend upon HEP for a substantial portion of the crude supply and distribution network that serve our refineries, and we own a significant equity interest in HEP.

At December 31, 2017, we owned a 59% limited partner interest and a non-economic general partner interest in HEP. HEP operates a system of crude oil and petroleum product pipelines; distribution terminals and refinery tankage in Arizona, Idaho, Kansas, Nevada, New Mexico, Oklahoma, Texas, Utah, Washington and Wyoming and refinery units in Kansas and Utah. HEP generates revenues by charging tariffs for transporting petroleum products and crude oil through its pipelines, leasing certain pipeline capacity to Delek, charging fees for terminalling refined products and other hydrocarbons and storing and providing other services at its terminals. HEP serves the Cheyenne, El Dorado, Navajo, Woods Cross and Tulsa Refineries under several long-term pipeline and terminal, tankage and throughput agreements expiring in 2020 through 2036, serves the El Dorado Refinery under long-term tolling agreements expiring in 2030 and serves the Woods Cross Refinery under long-term tolling agreements expiring in 2031. Furthermore, our financial statements include the consolidated results of HEP. HEP is subject to its own operating and regulatory risks, including, but not limited to:

- its reliance on its significant customers, including us;
- competition from other pipelines;
- environmental regulations affecting pipeline operations;
- operational hazards and risks;
- pipeline tariff regulations affecting the rates HEP can charge;
- limitations on additional borrowings and other restrictions due to HEP's debt covenants; and
- other financial, operational and legal risks.

The occurrence of any of these risks could directly or indirectly affect HEP's as well as our financial condition, results of operations and cash flows as HEP is a consolidated VIE. Additionally, these risks could affect HEP's ability to continue operations which could affect their ability to serve our supply and distribution network needs.

For additional information about HEP, see “Holly Energy Partners, L.P.” under Items 1 and 2, “Business and Properties.” For risks related to HEP's business, see Item 1A of HEP's Annual Report on Form 10-K for the fiscal year ended December 31, 2017.

We are exposed to the credit risks, and certain other risks, of our key customers and vendors.

We are subject to risks of loss resulting from nonpayment or nonperformance by our customers. We derive a significant portion of our revenues from contracts with key customers.

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If any of our key customers default on their obligations to us, our financial results could be adversely affected. Furthermore, some of our customers may be highly leveraged and subject to their own operating and regulatory risks. In addition, nonperformance by vendors who have committed to provide us with products or services could result in higher costs or interfere with our ability to successfully conduct our business.

Any substantial increase in the nonpayment and/or nonperformance by our customers or vendors could have a material adverse effect on our results of operations and cash flows.

Terrorist attacks (including cyber-attacks), and the threat of terrorist attacks or domestic vandalism, have resulted in increased costs to our business. Continued global hostilities or other sustained military campaigns may adversely impact our results of operations.

The long-term impacts of terrorist attacks and the threat of future terrorist attacks (including cyber-attacks) on the energy transportation industry in general, and on us in particular, are unknown. Increased security measures taken by us as a precaution against possible terrorist attacks or vandalism have resulted in increased costs to our business. Uncertainty surrounding continued global hostilities or other sustained military campaigns, and the possibility that infrastructure facilities could be direct targets of, or indirect casualties of, an act of terror, may affect our operations in unpredictable ways, including disruptions of crude oil supplies and markets for refined products. In addition, disruption or significant increases in energy prices could result in government-imposed price controls. Any one of, or a combination of, these occurrences could have a material adverse effect on our business, financial condition and results of operations.

Changes in the insurance markets attributable to terrorist attacks could make certain types of insurance more difficult for us to obtain. Moreover, the insurance that may be available to us may be significantly more expensive than our existing insurance coverage. Instability in the financial markets as a result of terrorism or war could also affect our ability to raise capital including our ability to repay or refinance debt.

Increases in required fuel economy and regulation of $CO_2$ emissions from motor vehicles may reduce demand for transportation fuels.

In 2010, the EPA and the National Highway Traffic Safety Administration (“NHTSA”) finalized new standards, raising the required Corporate Average Fuel Economy (“CAFE”) of the nation's passenger fleet by 40% to approximately 35 miles per gallon (“m.p.g.”) by 2016 and imposing the first-ever federal GHG emissions standards on cars and light trucks. In September 2011, the EPA and the Department of Transportation finalized first-time standards for fuel economy of medium and heavy duty trucks. On August 28, 2012, the EPA and NHTSA adopted standards through model year 2025 in two phases. The first phase establishes final standards for 2017-2021 model year vehicles that are projected to require 40.3 - 41.0 m.p.g. in model year 2021 on an average industry fleet-wide basis. The second phase of the CAFE program represents non-final “augural” standards for 2022-2025 model year vehicles that are projected to require 48.7 - 49.7 m.p.g. in model year 2025, on an average industry fleet-wide basis. In 2017, the EPA and NHTSA announced that the agencies were reconsidering the second phase CAFE standards, which could result in maintaining the first phase standards for the 2022-2025 model years. A final decision is expected during the first half of 2018. Any increases in fuel economy standards, along with mandated increases in use of renewable fuels discussed above, could result in decreasing demand for petroleum fuels. Decreasing demand for petroleum fuels could have a material effect on our financial condition and results of operation.

To successfully operate our petroleum refining facilities, we are required to expend significant amounts for capital outlays and operating expenditures.

The refining business is characterized by high fixed costs resulting from the significant capital outlays associated with refineries, terminals, pipelines and related facilities. We are dependent on the production and sale of quantities of refined products at refined product margins sufficient to cover operating costs, including any increases in costs resulting from future inflationary pressures or market conditions and increases in costs of fuel and power necessary in operating our facilities. Furthermore, future major capital investment, various environmental compliance related projects, regulatory requirements or competitive pressures could result in additional capital expenditures, which may not produce a return on investment. Such capital expenditures may require significant financial resources that may be contingent on our access to capital markets and commercial bank loans. Additionally, other matters, such as regulatory requirements or legal actions, may restrict our access to funds for capital expenditures.

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Our refineries consist of many processing units, a number of which have been in operation for many years. One or more of the units may require unscheduled downtime for unanticipated maintenance or repairs that are more frequent than our scheduled turnaround for such units. Scheduled and unscheduled maintenance could reduce our revenues during the period of time that the units are not operating. We have taken significant measures to expand and upgrade units in our refineries by installing new equipment and redesigning older equipment to improve refinery capacity. The installation and redesign of key equipment at our refineries involves significant uncertainties, including the following: our upgraded equipment may not perform at expected throughput levels; operating costs of the upgraded equipment may be higher than expected; the yield and product quality of new equipment may differ from design and/or specifications and redesign, modification or replacement of the equipment may be required to correct equipment that does not perform as expected, which could require facility shutdowns until the equipment has been redesigned or modified. Any of these risks associated with new equipment, redesigned older equipment, or repaired equipment could lead to lower revenues or higher costs or otherwise have a negative impact on our future financial condition and results of operations.

In addition, we expect to execute turnarounds at our refineries, which involve numerous risks and uncertainties. These risks include delays and incurrence of additional and unforeseen costs. The turnarounds allow us to perform maintenance, upgrades, overhaul and repair of process equipment and materials, during which time all or a portion of the refinery will be under scheduled downtime.

We may be unable to pay future dividends.

We will only be able to pay dividends from our available cash on hand, cash from operations or borrowings under our credit agreement. The declaration of future dividends on our common stock will be at the discretion of our board of directors and will depend upon many factors, including our results of operations, financial condition, earnings, capital requirements, and restrictions in our debt agreements and legal requirements. We cannot assure you that any dividends will be paid or the frequency or amounts of such payments.

Product liability claims and litigation could adversely affect our business and results of operations.

A significant portion of our operating responsibility on refined product pipelines is to insure the quality and purity of the products loaded at our loading racks. If our quality control measures were to fail, we may have contaminated or off-specification commingled pipelines and storage tanks or off-specification product could be sent to public gasoline stations. These types of incidents could result in product liability claims from our customers.

Product liability is a significant commercial risk. Substantial damage awards have been made in certain jurisdictions against manufacturers and resellers based upon claims for injuries caused by the use of or exposure to various products. There can be no assurance that product liability claims against us would not have a material adverse effect on our business or results of operations or our ability to maintain existing customers or retain new customers.

Our hedging transactions may limit our gains and expose us to other risks.

We periodically enter into derivative transactions as it relates to inventory levels and/or future production to manage the risks from changes in the prices of crude oil, refined products and other feedstocks. These transactions limit our potential gains if commodity prices move above or below the certain price levels established by our hedging instruments. We hedge price risk on inventories above our target levels to minimize the impact these price fluctuations have on our earnings and cash flows. Consequently, our hedging results may fluctuate significantly from one reporting period to the next depending on commodity price fluctuations and our relative physical inventory positions. These transactions may also expose us to risks of financial losses; for example, if our production is less than we anticipated at the time we entered into a hedge agreement or if a counterparty to our hedge agreements fails to perform its obligations under the agreements.

Changes in our credit profile, or a significant increase in the price of crude oil, may affect our relationship with our suppliers, which could have a material adverse effect on our liquidity and limit our ability to purchase sufficient quantities of crude oil to operate our refineries at desired capacity.

An unfavorable credit profile, or a significant increase in the price of crude oil, could affect the way crude oil suppliers view our ability to make payments and induce them to shorten the payment terms of their invoices with us or require credit enhancement. Due to the large dollar amounts and volume of our crude oil and other feedstock purchases, any imposition by our suppliers of more burdensome payment terms or credit enhancement requirements on us may have a material adverse effect on our liquidity and our ability to make payments to our suppliers. This in turn could cause us to be unable to operate our refineries at desired capacity. A failure to operate our refineries at desired capacity could adversely affect our profitability and cash flow.

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Our credit facility contains certain covenants and restrictions that may constrain our business and financing activities.

The operating and financial restrictions and covenants in our credit facility and any future financing agreements could adversely affect our ability to finance future operations or capital needs or to engage, expand or pursue our business activities. For example, our revolving credit facility imposes usual and customary requirements for this type of credit facility, including: (i) limitations on liens and indebtedness; (ii) a prohibition on changes in control and (iii) restrictions on engaging in mergers and consolidations. If we fail to satisfy the covenants set forth in the credit facility or another event of default occurs under the credit facility, the maturity of the loan could be accelerated or we could be prohibited from borrowing for our future working capital needs and issuing letters of credit. We might not have, or be able to obtain, sufficient funds to make these immediate payments. If we desire to undertake a transaction that is prohibited by the covenants in our credit facility, we will need to obtain consent under our credit facility. Such refinancing may not be possible or may not be available on commercially acceptable terms.

Our business may suffer due to a departure of any of our key senior executives or other key employees. Furthermore, a shortage of skilled labor or disruptions in our labor force may make it difficult for us to maintain labor productivity.

Our future performance depends to a significant degree upon the continued contributions of our senior management team and key technical personnel. We do not currently maintain key man life insurance, non-compete agreements, or employment agreements with respect to any member of our senior management team. The loss or unavailability to us of any member of our senior management team or a key technical employee could significantly harm us. We face competition for these professionals from our competitors, our customers and other companies operating in our industry. To the extent that the services of members of our senior management team and key technical personnel would be unavailable to us for any reason, we may be required to hire other personnel to manage and operate our company. We may not be able to locate or employ such qualified personnel on acceptable terms, or at all.

Furthermore, our operations require skilled and experienced laborers with proficiency in multiple tasks. A shortage of trained workers due to retirements or otherwise could have an adverse impact on our labor productivity and costs and our ability to expand production in the event there is an increase in the demand for our products and services, which could adversely affect our operations.

As of December 31, 2017, approximately 33% of our employees were represented by labor unions under collective bargaining agreements with various expiration dates. 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 and financial condition.

The market price of our common stock may fluctuate significantly, and the value of a stockholder’s investment could be impacted.

The market price of our common stock may be influenced by many factors, some of which are beyond our control, including:

- our quarterly or annual earnings or those of other companies in our industry;
- changes in accounting standards, policies, guidance, interpretations or principles;
- general economic, industry and stock market conditions;
- the failure of securities analysts to cover our common stock or changes in financial estimates by analysts;
- future sales of our common stock;
- announcements by us or our competitors of significant contracts or acquisitions;
- sales of common stock by us, our senior officers or our affiliates; and/or

- the other factors described in these Risk Factors.

In recent years, the stock market has experienced extreme price and volume fluctuations. This volatility has had a significant impact on the market price of securities issued by many companies, including companies in our industry. The price of our common stock could fluctuate based upon factors that have little or nothing to do with our company, and these fluctuations could materially reduce our stock price.

Item 1B. Unresolved Staff Comments

We do not have any unresolved staff comments.

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## Item 3. Legal Proceedings

### Commitment and Contingency Reserves

We periodically establish reserves for certain legal proceedings. The establishment of a reserve involves an estimation process that includes the advice of legal counsel and subjective judgment of management. While management believes these reserves to be adequate, future changes in the facts and circumstances could result in the actual liability exceeding the estimated ranges of loss and amounts accrued.

While the outcome and impact on us cannot be predicted with certainty, based on advice of counsel, management believes that the resolution of these proceedings through settlement or adverse judgment will not either individually or in the aggregate have a materially adverse effect on our financial condition, results of operations or cash flows.

### Environmental Matters

We are reporting the following proceedings to comply with SEC regulations which require us to disclose proceedings arising under federal, state, provincial or local provisions regulating the discharge of materials into the environment or protecting the environment if we reasonably believe that such proceedings may result in monetary sanctions of $100,000 or more. Our respective subsidiaries have or will develop corrective action plans regarding these disclosures that will be implemented in consultation with the respective federal and state agencies. It is not possible to predict the ultimate outcome of these proceedings, although none are currently expected to have a material effect on our financial condition, results of operations or cash flows.

#### Cheyenne

HollyFrontier Cheyenne Refining LLC (“HFCR”) has been engaged in discussions with the Wyoming Department of Environmental Quality (“WDEQ”) relating to a Notice of Violation issued in late 2016 for possible violations of air quality standards related to operation of certain refinery units at the Cheyenne Refinery in 2016 and 2017. HFCR and the WDEQ are working towards a settlement of this matter.

#### El Dorado

The El Dorado Refinery is engaged in discussions with, and has responded to document requests from, the EPA and the U.S. Department of Justice (“DOJ”) regarding potential Clean Air Act violations relating to flaring devices and other equipment at the refinery. Topics of the discussions include (a) three information requests for activities occurring January 1, 2009 through May 31, 2014 and a September 2017 incident, (b) Risk Management Program compliance issues relating to a November 2014 inspection and (c) a Notice of Violation issued by the EPA in August 2017. We will continue to work with the EPA and DOJ to resolve these matters.

#### Tulsa

HollyFrontier Tulsa Refining LLC (“HFTR”) manufactures paraffin and hydrocarbon waxes at its Tulsa West facility. On March 11, 2014, the EPA issued a notice to HFTR of possible violations of certain provisions of the federal Toxic Substances Control Act in connection with the manufacture of certain of these products. HFTR and the EPA met and are working productively towards a settlement of this matter.

HFTR operates under two Consent Decrees with the EPA and the Oklahoma Department of Environmental Quality (“ODEQ”). On December 13, 2017, during a meeting between the parties, ODEQ proposed stipulated penalties related to violations of the two Consent Decrees. The violations relate to Clean Air Act regulated fuel gas and flare operations. HFTR is currently negotiating with the ODEQ and the EPA.

### Other

We are a party to various other litigation and proceedings that we believe, based on advice of counsel, will not either individually or in the aggregate have a materially adverse impact on our financial condition, results of operations or cash flows.

Item 4. Mine Safety Disclosures

Not Applicable.

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PART II

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

Our common stock is traded on the New York Stock Exchange under the trading symbol "HFC." The following table sets forth the range of the daily high and low sales prices per share of common stock, dividends declared per share and the trading volume of common stock for the periods indicated:

| Years Ended December 31, | High | Low | Dividends | Trading Volume |
|---|---|---|---|---|
| 2017 | | | | |
| Fourth quarter | $52.00 | $34.47 | $ 0.33 | 152,263,000 |
| Third quarter | $36.46 | $25.97 | $ 0.33 | 180,192,400 |
| Second quarter | $29.14 | $23.46 | $ 0.33 | 171,701,200 |
| First quarter | $34.78 | $26.23 | $ 0.33 | 188,138,300 |
| | | | | |
| 2016 | | | | |
| Fourth quarter | $34.13 | $22.63 | $ 0.33 | 227,228,500 |
| Third quarter | $27.98 | $22.07 | $ 0.33 | 263,014,600 |
| Second quarter | $37.98 | $22.53 | $ 0.33 | 201,750,800 |
| First quarter | $41.29 | $29.00 | $ 0.33 | 197,404,600 |

In May 2015, our Board of Directors approved a $1 billion share repurchase program authorizing us to repurchase common stock in the open market or through privately negotiated transactions based on market conditions, securities law limitations and other relevant considerations. The following table includes repurchases made under this program during the fourth quarter of 2017.

| Period | Total Number of Shares Purchased | Average Price Paid Per Share | Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs | Maximum Dollar Value of Shares that May Yet Be Purchased under the Plans or Programs |
|---|---|---|---|---|
| October 2017 | — | $ — | — | $ 178,811,213 |
| November 2017 | — | $ — | — | $ 178,811,213 |
| December 2017 | — | $ — | — | $ 178,811,213 |
| Total for October to December 2017 | — | | — | |

As of February 13, 2018, we had approximately 91,488 stockholders, including beneficial owners holding shares in street name.

We intend to consider the declaration of a dividend on a quarterly basis, although there is no assurance as to future dividends since they are dependent upon future earnings, capital requirements, our financial condition and other factors.

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Item 6. Selected Financial Data

The following table shows our selected financial information as of the dates or for the periods indicated. This table should be read in conjunction with Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes thereto included elsewhere in this Annual Report on Form 10-K.

| | Years Ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2017 | 2016 | 2015 | 2014 | 2013 |
| | (In thousands, except per share data) | | | | |
| FINANCIAL DATA | | | | | |
| For the period | | | | | |
| Sales and other revenues | $14,251,299 | $10,535,700 | $13,237,920 | $19,764,327 | $20,160,560 |
| Income (loss) before income taxes [1,2] | 868,863 | (171,534) | 1,208,568 | 467,500 | 1,159,399 |
| Income tax expense (benefit) | (12,379) | 19,411 | 406,060 | 141,172 | 391,576 |
| Net income (loss) | 881,242 | (190,945) | 802,508 | 326,328 | 767,823 |
| Less net income attributable to noncontrolling interest | 75,847 | 69,508 | 62,407 | 45,036 | 31,981 |
| Net income (loss) attributable to HollyFrontier stockholders | $805,395 | $(260,453) | $740,101 | $281,292 | $735,842 |
| Earnings (loss) per share attributable to HollyFrontier stockholders - basic | $4.54 | $(1.48) | $3.91 | $1.42 | $3.66 |
| Earnings (loss) per share attributable to HollyFrontier stockholders - diluted | $4.52 | $(1.48) | $3.90 | $1.42 | $3.64 |
| Cash dividends declared per common share | $1.32 | $1.32 | $1.31 | $3.26 | $3.20 |
| Average number of common shares outstanding: | | | | | |
| Basic | 176,174 | 176,101 | 188,731 | 197,243 | 200,419 |
| Diluted | 177,196 | 176,101 | 188,940 | 197,428 | 201,234 |
| | | | | | |
| Net cash provided by operating activities | $951,390 | $606,948 | $985,868 | $758,596 | $869,174 |
| Net cash used for investing activities | $(959,670) | $(801,597) | $(381,748) | $(292,322) | $(526,735) |
| Net cash provided by (used for) financing activities | $(72,630) | $838,695 | $(1,105,572) | $(838,392) | $(1,160,035) |
| | | | | | |
| At end of period | | | | | |
| Cash, cash equivalents and investments in marketable securities | $630,757 | $1,134,727 | $210,552 | $1,042,095 | $1,665,263 |
| Working capital | $1,640,118 | $1,767,780 | $587,450 | $1,549,004 | $2,445,953 |
| Total assets | $10,692,154 | $9,435,661 | $8,388,299 | $9,230,047 | $10,055,763 |
| Total debt | $2,498,993 | $2,235,137 | $1,040,040 | $1,054,297 | $996,543 |
| Total equity | $5,896,940 | $5,301,985 | $5,809,773 | $6,100,719 | $6,609,398 |

(1) Reflects non-cash lower of cost or market inventory valuation adjustments that increased pre-tax earnings by $108.7 million and $291.9 million for the years ended December 31, 2017 and 2016 and decreased pre-tax earnings by $227.0 million and $397.5 million for the years ended December 31, 2015 and 2014, respectively.

(2) Includes a long-lived asset impairment charge of $19.2 million that relate to our Woods Cross Refinery for the year ended December 31, 2017 and goodwill and long-lived asset impairment charges of $309.3 million and $344.8 million, respectively, that relate to our Cheyenne Refinery, for the year ended December 31, 2016.

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

This Item 7 contains "forward-looking" statements. See "Forward-Looking Statements" at the beginning of this Annual Report on Form 10-K. In this document, the words "we," "our," "ours" and "us" refer only to HollyFrontier and its consolidated subsidiaries or to HollyFrontier or an individual subsidiary and not to any other person with certain exceptions. Generally, the words "we," "our," "ours" and "us" include HEP and its subsidiaries as consolidated subsidiaries of HollyFrontier, unless when used in disclosures of transactions or obligations between HEP and HollyFrontier or its other subsidiaries. This document contains certain disclosures of agreements that are specific to HEP and its consolidated subsidiaries and do not necessarily represent obligations of HollyFrontier. When used in descriptions of agreements and transactions, "HEP" refers to HEP and its consolidated subsidiaries.

Overview

We are principally an independent petroleum refiner that produces high-value refined products such as gasoline, diesel fuel, jet fuel, specialty lubricant products, and specialty and modified asphalt. We own and operate refineries having a combined nameplate crude oil processing capacity of 457,000 barrels per day that serve markets throughout the Mid-Continent, Southwest and Rocky Mountain regions of the United States. Our refineries are located in El Dorado, Kansas (the El Dorado Refinery), Tulsa, Oklahoma (the Tulsa Refineries), which comprise two production facilities, the Tulsa West and East facilities, Artesia, New Mexico, which operates in conjunction with crude, vacuum distillation and other facilities situated 65 miles away in Lovington, New Mexico (collectively, the Navajo Refinery), Cheyenne, Wyoming (the Cheyenne Refinery) and Woods Cross, Utah (the Woods Cross Refinery).

On October 29, 2016, our wholly-owned subsidiary, 9952110 Canada Inc., entered into a share purchase agreement with Suncor to acquire 100% of the outstanding capital stock of PCLI. The acquisition closed on February 1, 2017. Cash consideration paid was $862.1 million, or $1.125 billion in Canadian dollars.

PCLI is a Canadian-based producer of base oils with a plant having 15,600 BPD of lubricant production capacity that is located in Mississauga, Ontario. The facility is downstream integrated from base oils to finished lubricants and produces a broad spectrum of specialty lubricants and white oils that are distributed to end customers worldwide through a global sales network with locations in Canada, the United States, Europe and China.

For the year ended December 31, 2017, net income attributable to HollyFrontier stockholders was $805.4 million compared to a net loss of $260.5 million and net income $740.1 million for the years ended December 31, 2016, and 2015, respectively. Overall gross refining margins per barrel sold for 2017 increased 42% over the year ended December 31, 2016, which was due principally to higher crack spreads throughout 2017. Included in our financial results for the current year was a long-lived asset impairment charge, offset by an inventory reserve adjustment.

Pursuant to the 2007 Energy Independence and Security Act, the EPA promulgated the RFS regulations, which increased the volume of renewable fuels mandated to be blended into the nation's fuel supply. The regulations, in part, require refiners to add annually increasing amounts of "renewable fuels" to their petroleum products or purchase credits, known as RINs, in lieu of such blending. Compliance with RFS regulations significantly increases our cost of products sold, with RINs costs totaling $288.4 million for the year ended December 31, 2017, which is net of the $57.7 million cost reduction resulting from reinstatement of 2016 RINs as described in Note 8 "Inventories" in the Notes to Consolidated Financial Statements.

OUTLOOK

The profitability of our refining business is largely driven by our operational reliability and crack spreads (the price difference between refined products and inputs such as crude oil), which are driven by the supply and demand of refined product markets. In 2017, crack spreads showed material improvement over 2016 as global and North American refined product market supply and demand tightened. Going into 2018, we are anticipating continued demand growth for refined products and are optimistic about margins. Additionally, we expect to benefit from widening crude differentials on some of our key inputs in the Refining segment: Cushing-based crude oils and Canadian heavy crude oils.

Our lubricants business is driven by secular demand for higher quality lubricants and greases, cyclical macroeconomic factors and our own operational reliability. In 2017, we acquired and integrated the Petro-Canada Lubricants business into our business and going into 2018, we anticipate strong earnings growth based on continued economic growth as well as the execution of our organic growth strategy.

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HEP's business is largely driven by the operational reliability of our refineries and contractual tariff increases. Based on our volume forecasts, we expect HEP to be able to grow its limited partner distribution approximately 4% with a distribution coverage ratio of roughly 1.0x.

A more detailed discussion of our financial and operating results for the years ended December 31, 2017, 2016 and 2015 is presented in the following sections.

Results Of Operations

Financial Data

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| | (In thousands, except per share data) | | |
| Sales and other revenues | $14,251,299 | $10,535,700 | $13,237,920 |
| Operating costs and expenses: | | | |
| Cost of products sold (exclusive of depreciation and amortization): | | | |
| Cost of products sold (exclusive of lower of cost or market inventory valuation adjustment) | 11,467,799 | 8,765,927 | 10,239,218 |
| Lower of cost or market inventory valuation adjustment | (108,685) | (291,938) | 226,979 |
| | 11,359,114 | 8,473,989 | 10,466,197 |
| Operating expenses (exclusive of depreciation and amortization) | 1,294,234 | 1,018,839 | 1,060,373 |
| Selling, general and administrative expenses (exclusive of depreciation and amortization) | 264,874 | 125,648 | 120,846 |
| Depreciation and amortization | 409,937 | 363,027 | 346,151 |
| Goodwill and asset impairment | 19,247 | 654,084 | — |
| Total operating costs and expenses | 13,347,406 | 10,635,587 | 11,993,567 |
| Income (loss) from operations | 903,893 | (99,887) | 1,244,353 |
| Other income (expense): | | | |
| Earnings (loss) of equity method investments | 12,510 | 14,213 | (3,738) |
| Interest income | 3,736 | 2,491 | 3,391 |
| Interest expense | (117,597) | (72,192) | (43,470) |
| Loss on early extinguishment of debt | (12,225) | (8,718) | (1,370) |
| Gain (loss) on foreign currency swap | 24,545 | (6,520) | — |
| Gain on foreign currency transactions | 16,921 | — | — |
| Remeasurement gain on HEP pipeline interest acquisitions | 36,254 | — | — |
| Other, net | 826 | (921) | 9,402 |
| | (35,030) | (71,647) | (35,785) |
| Income (loss) before income taxes | 868,863 | (171,534) | 1,208,568 |
| Income tax expense (benefit) | (12,379) | 19,411 | 406,060 |
| Net income (loss) | 881,242 | (190,945) | 802,508 |
| Less net income attributable to noncontrolling interest | 75,847 | 69,508 | 62,407 |
| Net income (loss) attributable to HollyFrontier stockholders | $805,395 | $(260,453) | $740,101 |
| Earnings (loss) per share attributable to HollyFrontier stockholders: | | | |
| Basic | $4.54 | $(1.48) | $3.91 |
| Diluted | $4.52 | $(1.48) | $3.90 |
| Cash dividends declared per common share | $1.32 | $1.32 | $1.31 |
| Average number of common shares outstanding: | | | |
| Basic | 176,174 | 176,101 | 188,731 |

| | | | |
|---|---|---|---|
| Diluted | 177,196 | 176,101 | 188,940 |

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Other Financial Data

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| | (In thousands) | | |
| Net cash provided by operating activities | $951,390 | $606,948 | $985,868 |
| Net cash used for investing activities | $(959,670) | $(801,597) | $(381,748) |
| Net cash provided by (used for) financing activities | $(72,630) | $838,695 | $(1,105,572) |
| Capital expenditures | $272,259 | $479,790 | $676,155 |
| EBITDA [(1)] | $1,329,039 | $200,404 | $1,533,761 |

(1) Earnings before interest, taxes, depreciation and amortization, which we refer to as "EBITDA," is calculated as net income (loss) attributable to HollyFrontier stockholders plus (i) interest expense, net of interest income, (ii) income tax provision, and (iii) depreciation and amortization. EBITDA is not a calculation provided for under GAAP; however, the amounts included in the EBITDA calculation are derived from amounts included in our consolidated financial statements. EBITDA should not be considered as an alternative to net income or operating income as an indication of our operating performance or as an alternative to operating cash flow as a measure of liquidity. EBITDA is not necessarily comparable to similarly titled measures of other companies. EBITDA is presented here because it is a widely used financial indicator used by investors and analysts to measure performance. EBITDA is also used by our management for internal analysis and as a basis for financial covenants. EBITDA presented above is reconciled to net income under "Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles" following Item 7A of Part II of this Form 10-K.

Supplemental Segment Operating Data

Effective in the fourth quarter of 2017, we revised our reportable segments to align with certain changes in how our chief operating decision maker manages and allocates resources to our business. Accordingly, our Tulsa Refineries lubricants operations, previously reported in the Refining segment, are now combined with the operations of our Petro-Canada Lubricants business and reported in the Lubricants and Specialty Products segment. Our prior period segment information has been retrospectively adjusted to reflect our current segment presentation.

Our operations are organized into three reportable segments, Refining, Lubricants and Specialty Products and HEP. See Note 20 "Segment Information" in the Notes to Consolidated Financial Statements for additional information on our reportable segments.

Refining Segment Operating Data

Our refinery operations include the El Dorado, Tulsa, Navajo, Cheyenne and Woods Cross Refineries. The following tables set forth information, including non-GAAP performance measures, about our consolidated refinery operations. The cost of products and refinery gross and net operating margins do not include the non-cash effects of goodwill and asset impairments charges, lower of cost or market inventory valuation adjustments and depreciation and amortization. Reconciliations to amounts reported under GAAP are provided under "Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles" following Item 7A of Part II of this Form 10-K.

During the fourth quarter of 2017, we revised the following refining segment operating data computations: refinery gross margin; net operating margin; and operating expenses to better align with similar measurements provided by other companies in our industry and to facilitate comparison of our refining performance relative to our peers. Effective with this change, these measurements are now inclusive of all refining segment activities including HFC asphalt operations and revenues and costs related to products purchased for resale and excess crude oil sales. All prior period data has been retrospectively adjusted to reflect our current presentation.

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| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Consolidated | | | |
| Crude charge (BPD) [(1)] | 438,800 | 423,910 | 432,560 |
| Refinery throughput (BPD) [(2)] | 472,010 | 457,480 | 463,580 |
| Sales of produced refined products (BPD) [(3)] | 452,270 | 440,640 | 442,650 |
| Refinery utilization [(4)] | 96.0 % | 92.8 % | 97.6 % |
| | | | |
| Average per produced barrel sold [(5)] | | | |
| Refinery gross margin [(6)] | $11.56 | $8.16 | $15.88 |
| Refinery operating expenses [(7)] | 6.10 | 5.64 | 5.82 |
| Net operating margin | $5.46 | $2.52 | $10.06 |
| | | | |
| Refinery operating expenses per throughput barrel [(8)] | $5.84 | $5.43 | $5.56 |

(1) Crude charge represents the barrels per day of crude oil processed at our refineries.

(2) Refinery throughput represents the barrels per day of crude and other refinery feedstocks input to the crude units and other conversion units at our refineries.

(3) Represents barrels sold of refined products produced at our refineries (including HFC Asphalt) and does not include volumes of refined products purchased for resale or volumes of excess crude oil sold.

(4) Represents crude charge divided by total crude capacity (BPSD). Effective July 1, 2016, our consolidated crude capacity increased from 443,000 BPSD to 457,000 BPSD upon completion of our Woods Cross Refinery expansion project.

(5) Represents average amount per produced barrel sold, which is a non-GAAP measure. Reconciliations to amounts reported under GAAP are provided under “Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles” following Item 7A of Part II of this Form 10-K.

(6) Excludes lower of cost or market inventory valuation adjustments that increased refinery gross margin by $108.7 million and $291.9 million for the years ended December 31, 2017 and 2016, respectively, and decreased refinery gross margin by $227.0 million for the year ended December 31, 2015.

(7) Represents total refining segment operating expenses, exclusive of depreciation and amortization, divided by sales volumes of refined products produced at our refineries.

(8) Represents total refining segment operating expenses, exclusive of depreciation and amortization, divided by refinery throughput.

Lubricants and Specialty Products Segment Operating Data

The following table sets forth information about our lubricants and specialty products operations and includes our Petro-Canada Lubricants business for the period February 1, 2017 (date of acquisition) through December 31, 2017.

| | Years Ended December 31, | | |
|---|---|---|---|
| Lubricants and Specialty Products | 2017 | 2016 | 2015 |
| Throughput (BPD) | 21,710 | — | — |
| Barrels sold (BPD) | 31,480 | 12,030 | 11,140 |

Our Lubricants and Specialty Products segment includes base oil production activities, by-product sales to third parties and intra-segment base oil sales to rack forward referred to as “rack back.” “Rack forward” includes the purchase of base oils and the blending, packaging, marketing and distribution and sales of finished lubricants and specialty products to third parties. Supplemental financial data attributable to our Lubricants and Specialty Products segment is presented below:

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| | Rack Back (1) | Rack Forward (2) | Eliminations (3) | Total Lubricants and Specialty Products |
|---|---|---|---|---|
| | (In thousands) | | | |
| Year Ended December 31, 2017 | | | | |
| Sales and other revenues | $621,153 | $1,415,842 | $(442,959 ) | $1,594,036 |
| Cost of products sold | 504,782 | 1,032,161 | (442,959 ) | 1,093,984 |
| Operating expenses | 95,303 | 127,158 | — | 222,461 |
| Selling, general and administrative expenses | 27,618 | 77,494 | — | 105,112 |
| Depreciation and amortization | 23,471 | 8,423 | — | 31,894 |
| Income (loss) from operations | $(30,021 ) | $171,812 | $— | $141,791 |
| | | | | |
| Year Ended December 31, 2016 | | | | |
| Sales and other revenues | $— | $464,359 | $— | $464,359 |
| Cost of products sold | — | 377,136 | — | 377,136 |
| Operating expenses | — | 13,867 | — | 13,867 |
| Selling, general and administrative expenses | — | 2,899 | — | 2,899 |
| Depreciation and amortization | — | 620 | — | 620 |
| Income from operations | $— | $73,927 | $— | $73,927 |
| | | | | |
| Year Ended December 31, 2015 | | | | |
| Sales and other revenues | $— | $493,282 | $— | $493,282 |
| Cost of products sold | — | 415,796 | — | 415,796 |
| Operating expenses | — | 14,042 | — | 14,042 |
| Selling, general and administrative expenses | — | 2,615 | — | 2,615 |
| Depreciation and amortization | — | 254 | — | 254 |
| Income from operations | $— | $60,575 | $— | $60,575 |

(1) Rack back consists of our PCLI base oil production activities, by-product sales to third parties and intra-segment base oil sales to rack forward.
(2) Rack forward activities include the purchase of base oils from rack back and the blending, packaging, marketing and distribution and sales of finished lubricants and specialty products to third parties.
(3) Intra-segment sales of rack back produced base oils to rack forward are eliminated under the “Eliminations” column.

Results of Operations – Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Summary

Net income attributable to HollyFrontier stockholders for the year ended December 31, 2017 was $805.4 million ($4.54 per basic and $4.52 per diluted share), a $1,065.8 million increase compared to a net loss attributable to HollyFrontier stockholders of $260.5 million ($1.48 per basic and diluted share) for the year ended December 31, 2016. Net income increased due principally to an increase in refining segment sales volumes and gross refining margins and the inclusion of earnings attributable to the operations of our recently acquired Petro-Canada Lubricants business. Additionally, we recorded long-lived asset impairment charges totaling $23.2 million for the year ended December 31, 2017 compared to goodwill and long-lived asset impairment charges totaling $654.1 million for the year ended December 31, 2016. For the year ended December 31, 2017, lower of cost or market inventory reserve adjustments increased pre-tax earnings by $108.7 million compared to $291.9 million for the year ended December 31, 2016. Refinery gross margins for the year ended December 31, 2017 increased to $11.56 per barrel sold from $8.16 for the year ended December 31, 2016. During 2017, our Cheyenne Refinery and Woods Cross Refinery were each granted a one-year small refinery exemption from the EPA at which time we recorded a $30.5 million and $27.3 million, respectively, decrease to our cost of products sold, reflecting the reinstatement of RINs previously expensed in 2016. The Tax Cut and Jobs Act was enacted on December 22, 2017, resulting in a tax benefit of $307.1 million for the year ended December 31, 2017.

Sales and Other Revenues
Sales and other revenues increased 35% from $10,535.7 million for the year ended December 31, 2016 to $14,251.3 million for the year ended December 31, 2017 due to a year-over-year increase in sales prices and higher product sales volumes. Sales and other revenues for the years ended December 31, 2017 and 2016 include $77.2 million and $68.9 million, respectively, in HEP revenues attributable to pipeline and transportation services provided to unaffiliated parties. Additionally, the operations of our Petro-Canada Lubricants business contributed $1,125.3 million in sales and other revenues to our Lubricants and Specialty Products segment for the year ended December 31, 2017.

Cost of Products Sold
Total cost of products sold increased 34% from $8,474.0 million for the year ended December 31, 2016 to $11,359.1 million for the year ended December 31, 2017, due principally to higher crude oil costs and higher sales volumes of products. Additionally, cost of products sold reflects a $108.7 million benefit that is attributable to a decrease in the lower of cost or market reserve for the year ended December 31, 2017, a $183.3 million decrease compared to $291.9 million for the same period of last year. The reserve at December 31, 2017 is based on market conditions and prices at that time. Additionally, we recorded a $30.5 million and $27.3 million RINs cost reduction during 2017 as a result of the reinstatement of previously utilized RINs following our Cheyenne Refinery and Woods Cross Refinery small refinery exemptions, respectively.

Gross Refinery Margins
Gross refinery margin per barrel sold increased 42% from $8.16 for the year ended December 31, 2016 to $11.56 for the year ended December 31, 2017. This was due to the effects of an increase in the average per barrel sold sales price, partially offset by increased crude oil and feedstock prices during the current year. Gross refinery margin does not include the non-cash effects of lower of cost or market inventory valuation adjustments, goodwill and asset impairment charges or depreciation and amortization. See “Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles” following Item 7A of Part II of this Form 10-K for a reconciliation to the income statement of sale prices of products sold and cost of products purchased.

Operating Expenses
Operating expenses, exclusive of depreciation and amortization, increased 27% from $1,018.8 million for the year ended December 31, 2016 to $1,294.2 million for the year ended December 31, 2017 due principally to $208.7 million in costs attributable to the operations of our Petro-Canada Lubricants business and higher purchased fuel costs compared to 2016. For the years ended December 31, 2017 and 2016, operating expenses include $137.6 million and $90.4 million, respectively, in costs attributable to HEP operations.

Selling, General and Administrative Expenses
Selling, general and administrative expenses increased 111% from $125.6 million for the year ended December 31, 2016 to $264.9 million for the year ended December 31, 2017, due principally to $127.7 million in costs attributable to the operations of our Petro-Canada Lubricants business and related acquisition and integration costs. Incremental direct acquisition and integration costs of our Petro-Canada Lubricants business totaled $27.9 million and $13.4 million for the years ended December 31, 2017 and 2016, respectively. For the years ended December 31, 2017 and 2016, selling, general and administrative expenses include $11.9 million and $10.1 million, respectively, in costs attributable to HEP operations.

Depreciation and Amortization Expenses
Depreciation and amortization increased 13% from $363.0 million for the year ended December 31, 2016 to $409.9 million for the year ended December 31, 2017. This increase was due principally to $30.9 million in depreciation and amortization expenses attributable to the operations of our Petro-Canada Lubricants business and capitalized improvement projects and capitalized refinery turnaround costs. For the years ended December 31, 2017 and 2016, depreciation and amortization expenses include $77.7 million and $68.8 million, respectively, in costs attributable to

HEP operations.

Goodwill and Asset Impairment

During the year ended December 31, 2017, we recorded a $19.2 million long-lived asset impairment charge resulting from management's plan to cease further expansion of our Woods Cross Refinery to add lubricants production compared to goodwill and long-lived asset impairment charges of $309.3 million and $344.8 million, respectively, for the year ended December 31, 2016 that related to our Cheyenne Refinery. See Note 10 “Goodwill” in the Notes to Consolidated Financial Statements for additional information on these impairments.

Interest Income

Interest income for the year ended December 31, 2017 was $3.7 million compared to $2.5 million for the year ended December 31, 2016. This increase was due to higher interest rates received on cash balances during 2017.

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Interest Expense
Interest expense was $117.6 million for the year ended December 31, 2017 compared to $72.2 million for the year ended December 31, 2016. This increase was due to interest attributable to higher debt levels during the current year relative to 2016. For the years ended December 31, 2017 and 2016, interest expense included $58.4 million and $52.6 million, respectively, in interest costs attributable to HEP operations.

Loss on Early Extinguishment of Debt
For the year ended December 31, 2017, a $12.2 million loss was recorded upon HEP's redemption of its $300 million aggregate principal amount of 6.5% senior notes maturing March 2020 at a cost of $309.8 million.

For the year ended December 31, 2016, we recognized an $8.7 million loss on the early retirement of a financing obligation, a component of outstanding debt, upon HEP's purchase of crude oil tanks from an affiliate of Plains. See Note 12 "Debt" in the Notes to Consolidated Financial Statements for additional information on this financing obligation.

Gain (Loss) on Foreign Currency Swap
During the years ended December 31, 2017 and 2016, we recorded a $24.5 million gain and a $6.5 million loss, respectively, on currency swap contracts that effectively fixed the conversion rate on $1.125 billion Canadian dollars (the PCLI purchase price), which were settled on February 1, 2017, in connection with the closing of the PCLI acquisition.

Gain on Foreign Currency Transactions
Remeasurement adjustments resulting from the conversion of the intercompany financing structure on our PCLI acquisition from local currencies to the U.S. dollar resulted in a $16.9 million gain for the year ended December 31, 2017.

Income Taxes
For the year ended December 31, 2017, we recorded a net income tax benefit of $12.4 million compared to an income tax expense of $19.4 million for the year ended December 31, 2016. Our effective tax rates, before consideration of earnings attributable to the noncontrolling interest, were (1.4)% and (11.3)% for the years ended December 31, 2017 and 2016, respectively. During the year ended December 31, 2017, we recorded a tax benefit of $307.1 million as a result of the Tax Cut and Jobs Act which was enacted on December 22, 2017. During the year ended December 31, 2016, we recorded a $309.3 million goodwill impairment charge, a significant driver of our $171.5 million loss before income taxes for the year ended December 31, 2016, that is not deductible for income tax purposes.

Results of Operations – Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Summary
Net loss attributable to HollyFrontier stockholders for the year ended December 31, 2016 was $260.5 million ($1.48 per basic and diluted share), a $1,000.6 million decrease compared to net income attributable to HollyFrontier stockholders of $740.1 million ($3.91 per basic and $3.90 per diluted share) for the year ended December 31, 2015. Net income decreased due principally to non-cash goodwill and long-lived asset impairment charges of $309.3 million and $344.8 million, respectively, and a year-over-year decrease in refining margins and sales volumes, net of the effects of a year-over-year change in lower of cost or market inventory reserve adjustments. For the year ended December 31, 2016, lower of cost or market inventory reserve adjustments increased pre-tax earnings by $291.9 million compared to a pre-tax earnings decrease of $227.0 million for the year ended December 31, 2015. Collectively, the impairment charges, net of the lower of cost or market valuation benefit, reduced 2016 pre-tax income by $362.1 million. Refinery gross margins for the year ended December 31, 2016 decreased to $8.16 per

barrel sold from $15.88 for the year ended December 31, 2015.

Sales and Other Revenues
Sales and other revenues decreased 20% from $13,237.9 million for the year ended December 31, 2015 to $10,535.7 million for the year ended December 31, 2016 due to a year-over-year decrease in sales prices and lower product sales volumes. Sales and other revenues for the years ended December 31, 2016 and 2015 include $68.9 million and $66.7 million, respectively, in HEP revenues attributable to pipeline and transportation services provided to unaffiliated parties.

Cost of Products Sold
Total cost of products sold decreased 19% from $10,466.2 million for the year ended December 31, 2015 to $8,474.0 million for the year ended December 31, 2016, due principally to lower crude oil costs and lower sales volumes of products. Additionally, this decrease reflects a $291.9 million benefit that is attributable to a reduction in the lower of cost or market reserve for the year ended December 31, 2016, a $518.9 million increase compared to a charge of $227.0 million for the year ended December 31, 2015. The reserve at December 31, 2016 is based on market conditions and prices at that time.

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Gross Refinery Margins
Gross refinery margin per barrel sold decreased 49% from $15.88 for the year ended December 31, 2015 to $8.16 for the year ended December 31, 2016. This was due to the effects of a decrease in the average per barrel sold sales price, partially offset by decreased crude oil and feedstock prices during the current year. Gross refinery margin does not include the non-cash effects of lower of cost or market inventory valuation adjustments, goodwill and asset impairment charges or depreciation and amortization. See "Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles" following Item 7A of Part II of this Form 10-K for a reconciliation to the income statement of prices of refined products sold and cost of products purchased.

Operating Expenses
Operating expenses, exclusive of depreciation and amortization, decreased 4% from $1,060.4 million for the year ended December 31, 2015 to $1,018.8 million for the year ended December 31, 2016 due principally to lower natural gas fuel and maintenance costs compared to 2015. For the years ended December 31, 2016 and 2015, operating expenses include $90.4 million and $102.3 million, respectively, in costs attributable to HEP operations.

Selling, General and Administrative Expenses
Selling, general and administrative expenses increased 4% from $120.8 million for the year ended December 31, 2015 to $125.6 million for the year ended December 31, 2016, due principally to pre-acquisition costs of PCLI. For the years ended December 31, 2016 and 2015, general and administrative expenses include $10.1 million and $10.2 million, respectively, in costs attributable to HEP operations.

Depreciation and Amortization Expenses
Depreciation and amortization increased 5% from $346.2 million for the year ended December 31, 2015 to $363.0 million for the year ended December 31, 2016. This increase was due principally to depreciation and amortization attributable to capitalized improvement projects and capitalized refinery turnaround costs. For the years ended December 31, 2016 and 2015, depreciation and amortization expenses include $68.8 million and $61.7 million, respectively, in costs attributable to HEP operations.

Goodwill and Asset Impairment
During the year ended December 31, 2016, we recorded goodwill and long-lived asset impairment charges of $309.3 million and $344.8 million, respectively, that relate to our Cheyenne Refinery. See Note 10 "Goodwill" in the Notes to Consolidated Financial Statements for additional information on the Cheyenne impairment.

Interest Income
Interest income for the year ended December 31, 2016 was $2.5 million compared to $3.4 million for the year ended December 31, 2015. This decrease was due to higher investment levels in marketable debt securities during 2015.

Interest Expense
Interest expense was $72.2 million for the year ended December 31, 2016 compared to $43.5 million for the year ended December 31, 2015. This increase was due to interest attributable to higher debt levels during 2016 relative to 2015. For the years ended December 31, 2016 and 2015, interest expense included $52.6 million and $36.9 million, respectively, in interest costs attributable to HEP operations.

Loss on Early Extinguishment of Debt
In March 2016, we recognized an $8.7 million loss on the early retirement of a financing obligation, a component of outstanding debt, upon HEP's purchase of crude oil tanks from an affiliate of Plains. See Note 12 "Debt" in the Notes to Consolidated Financial Statements for additional information on this financing obligation.

In June 2015, we recognized a $1.4 million early extinguishment loss on the redemption of our $150.0 million aggregate principal amount of 6.875% senior notes maturing November 2018.

Income Taxes

For the year ended December 31, 2016, we recorded income tax expense of $19.4 million compared to $406.1 million for the year ended December 31, 2015. This decrease was due principally to a pre-tax loss during the year ended December 31, 2016 compared to pre-tax earnings during the year ended 2015. Our effective tax rates, before consideration of earnings attributable to the noncontrolling interest, were (11.3)% and 33.6% for the years ended December 31, 2016 and 2015, respectively. For the year ended December 31, 2016. the effective tax rate reflects the effects of the $309.3 million goodwill impairment charge, a significant driver of our $171.5 million loss before income taxes for the year ended December 31, 2016, that is not deductible for income tax purposes.

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## LIQUIDITY AND CAPITAL RESOURCES

### HollyFrontier Credit Agreement

We have a $1.35 billion senior unsecured revolving credit facility maturing in February 2022 (the “HollyFrontier Credit Agreement”). The HollyFrontier Credit Agreement may be used for revolving credit loans and letters of credit from time to time and is available to fund general corporate purposes. During the year ended December 31, 2017, we received advances totaling $26.0 million and repaid $26.0 million under the HollyFrontier Credit Agreement. At December 31, 2017, we were in compliance with all covenants, had no outstanding borrowings and had outstanding letters of credit totaling $2.8 million under the HollyFrontier Credit Agreement.

### HEP Credit Agreement

HEP has a $1.4 billion senior secured revolving credit facility maturing in July 2022 (the “HEP Credit Agreement”) and is available to fund capital expenditures, investments, acquisitions, distribution payments, working capital and for general partnership purposes. It is also available to fund letters of credit up to a $50 million sub-limit and has a $300 million accordion. During the year ended December 31, 2017, HEP received advances totaling $969.0 million and repaid $510.0 million under the HEP Credit Agreement. At December 31, 2017, HEP was in compliance with all of its covenants, had outstanding borrowings of $1,012.0 million and no outstanding letters of credit under the HEP Credit Agreement.

### HEP Senior Notes

In September 2017, HEP issued an additional $100 million in aggregate principal amount of 6.0% HEP senior notes maturing in August 2024 in a private placement. HEP used the net proceeds of $101.8 million to repay indebtedness under the HEP Credit Agreement.

In January 2017, HEP redeemed its $300 million aggregate principal amount of 6.50% senior notes maturing March 2020 at a redemption cost of $309.8 million, at which time HEP recognized a $12.2 million early extinguishment loss consisting of a $9.8 million debt redemption premium and unamortized discount and financing costs of $2.4 million. HEP funded the redemption with borrowings under the HEP Credit Agreement.

See Note 12 "Debt" in the Notes to Consolidated Financial Statements for additional information on our debt instruments.

### HEP Common Unit Continuous Offering Program

On May 10, 2016, HEP established a continuous offering program under which HEP may issue and sell common units from time to time, representing limited partner interests, up to an aggregate gross sales amount of $200 million. During the year ended December 31, 2017, HEP issued 1,538,452 common units under this program, providing $52.1 million in net proceeds. In connection with this program and to maintain our then economic 2% general partner interest in HEP, we made capital contributions totaling $1.1 million during the year ended December 31, 2017. As of December 31, 2017, HEP has issued 2,241,907 common units with an aggregate gross sales amount of $77.1 million.

HEP intends to use the net proceeds for general partnership purposes, which may include funding working capital, repayment of debt, acquisitions and capital expenditures. Amounts repaid under HEP’s credit facility may be reborrowed from time to time.

### HEP Private Placement Agreement

On January 25, 2018, HEP entered into a common unit purchase agreement in which certain purchasers agreed to purchase in a private placement 3,700,000 HEP common units, representing limited partner interests, at a price of $29.73 per common unit. The private placement closed on February 6, 2018, at which time HEP received proceeds of approximately $110.0 million, which were used to repay indebtedness under the HEP Credit Agreement. After this common unit issuance, our limited partner interest in HEP is 57%.

Liquidity
We believe our current cash and cash equivalents, along with future internally generated cash flow and funds available under our credit facilities will provide sufficient resources to fund currently planned capital projects and our liquidity needs for the foreseeable future. In addition, components of our growth strategy include construction of new refinery processing units and the expansion of existing units at our facilities and selective acquisition of complementary assets for our refining operations intended to increase earnings and cash flow.

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As of December 31, 2017, our cash and cash equivalents totaled $630.8 million. We consider all highly-liquid instruments with a maturity of three months or less at the time of purchase to be cash equivalents. Cash equivalents are stated at cost, which approximates market value. These primarily consist of investments in conservative, highly-rated instruments issued by financial institutions, government and corporate entities with strong credit standings and money market funds.

On October 29, 2016, our wholly-owned subsidiary, 9952110 Canada Inc., entered into a share purchase agreement with Suncor to acquire 100% of the outstanding capital stock of PCLI. The acquisition closed on February 1, 2017. Cash consideration paid was $862.1 million, or $1.125 billion in Canadian dollars.

In May 2015, our Board of Directors approved a $1 billion share repurchase program, which replaced all existing share repurchase programs, authorizing us to repurchase common stock in the open market or through privately negotiated transactions. The timing and amount of stock repurchases will depend on market conditions and corporate, regulatory and other relevant considerations. This program may be discontinued at any time by our Board of Directors. As of December 31, 2017, we had remaining authorization to repurchase up to $178.8 million under this stock repurchase program. In addition, we are authorized by our Board of Directors to repurchase shares in an amount sufficient to offset shares issued under our compensation programs.

Cash and cash equivalents decreased $79.8 million for the year ended December 31, 2017. Net cash used for investing and financing activities of $959.7 million and $72.6 million, respectively, exceeded net cash provided by operating activities of $951.4 million. Working capital decreased by $127.7 million during the year ended December 31, 2017.

Cash Flows – Operating Activities

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016
Net cash flows provided by operating activities were $951.4 million for the year ended December 31, 2017 compared to $606.9 million for the year ended December 31, 2016, an increase of $344.4 million. Net income for the year ended December 31, 2017 was $881.2 million, an increase of $1,072.2 million compared to net loss of $190.9 million for the year ended December 31, 2016. Non-cash adjustments to net income consisting of depreciation and amortization, goodwill and asset impairment, lower of cost or market inventory valuation adjustment, earnings of equity method investments, inclusive of distributions, gain on equity company acquisition, gain or loss on sale of assets, loss on extinguishment of debt, deferred income taxes, equity-based compensation expense, fair value changes to derivative instruments and excess tax expense from equity-based compensation totaled $225.5 million for the year ended December 31, 2017 compared to $842.6 million for the same period in 2016. Changes in working capital items decreased cash flows by $6.1 million for the year ended December 31, 2017, and increased cash flows by $74.7 million for the year ended December 31, 2016. For the year ended December 31, 2017, turnaround expenditures increased to $135.1 million from $125.3 million for the same period of 2016.

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015
Net cash flows provided by operating activities were $606.9 million for the year ended December 31, 2016 compared to $985.9 million for the year ended December 31, 2015, a decrease of $378.9 million. Net loss for the year ended December 31, 2016 was $190.9 million, a decrease of $993.5 million compared to net income of $802.5 million for the year ended December 31, 2015. Non-cash adjustments to net income consisting of depreciation and amortization, goodwill and asset impairment, lower of cost or market inventory valuation adjustment, earnings of equity method investments, inclusive of distributions, gain on sale of assets, gain or loss on extinguishment of debt, deferred income taxes, equity-based compensation expense, fair value changes to derivative instruments and excess tax expense from equity-based compensation totaled $842.6 million for the year ended December 31, 2016 compared to $492.0 million for the same period in 2015. Changes in working capital items increased cash flows by $74.7 million for the year ended December 31, 2016 compared to a decrease of $195.1 million for the year ended December 31, 2015. For the

year ended December 31, 2016, turnaround expenditures increased to $125.3 million from $89.4 million for the same period of 2015.

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Cash Flows – Investing Activities and Planned Capital Expenditures

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016
Net cash flows used for investing activities were $959.7 million for the year ended December 31, 2017 compared to $801.6 million for the year ended December 31, 2016, an increase of $158.1 million. Current year investing activities reflect a net cash outflow of $870.6 million upon the acquisition of PCLI. Cash expenditures for properties, plants and equipment for 2017 decreased to $272.3 million from $479.8 million for the same period in 2016. These include HEP capital expenditures of $44.8 million and $107.6 million for the years ended December 31, 2017 and 2016, respectively. In addition, in 2017, HEP purchased the remaining interests in SLC Pipeline and Frontier Pipeline for $245.4 million. In 2016, HEP purchased a 50% interest in Cheyenne Pipeline for $42.6 million. We received proceeds of $1.4 million and $0.8 million from the sale of assets during the years ended December 31, 2017 and 2016, respectively. For the years ended December 31, 2017 and 2016, we invested $41.6 million and $546.6 million, respectively, in marketable securities and received proceeds of $465.7 million and $266.6 million, respectively, from the sale or maturity of marketable securities.

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015
Net cash flows used for investing activities were $801.6 million for the year ended December 31, 2016 compared to $381.7 million for the year ended December 31, 2015, an increase of $419.8 million. Cash expenditures for properties, plants and equipment for 2016 decreased to $479.8 million from $676.2 million for the same period in 2015. These include HEP capital expenditures of $107.6 million and $193.1 million for the years ended December 31, 2016 and 2015, respectively. In addition, in 2016, :HEP purchased a 50% interest in Cheyenne Pipeline for $42.6 million, and in 2015, a 50% interest in Frontier Pipeline for $55.0 million. We received proceeds of $0.8 million and $19.3 million from the sale of assets during the years ended December 31, 2016 and 2015, respectively. For the years ended December 31, 2016 and 2015, we invested $546.6 million and $509.3 million, respectively, in marketable securities and received proceeds of $266.6 million and $839.5 million, respectively, from the sale or maturity of marketable securities.

Planned Capital Expenditures

HollyFrontier Corporation
Each year our Board of Directors approves our annual capital budget which includes specific projects that management is authorized to undertake. Additionally, when conditions warrant or as new opportunities arise, additional projects may be approved. The funds appropriated for a particular capital project may be expended over a period of several years, depending on the time required to complete the project. Therefore, our planned capital expenditures for a given year consist of expenditures appropriated in that year’s capital budget plus expenditures for projects appropriated in prior years which have not yet been completed. During 2018, we expect to spend approximately $425.0 million to $500.0 million in cash for capital projects and refinery turnarounds appropriated in 2018 and prior years. Refinery turnaround spending is amortized over the useful life of the turnaround. Our expected capital and turnaround cash spending for 2018 is as follows:

| | Expected Cash Spending Range (In millions) | |
|---|---|---|
| Type: | | |
| Capital | $225.0 | $280.0 |
| Turnarounds | 200.0 | 220.0 |
| Total | $425.0 | $500.0 |

The refining industry is capital intensive and requires on-going investments to sustain our refining operations. This includes replacement of, or rebuilding, refinery units and components that extend the useful life. We also invest in projects that improve operational reliability and profitability via enhancements that improve refinery processing capabilities as well as production yield and flexibility. Our capital expenditures also include projects related to environmental, health and safety compliance and include initiatives as a result of federal and state mandates.

A significant portion of our current capital spending is associated with compliance-oriented capital improvements. This spending is required due to existing consent decrees (for projects including FCC unit flue gas scrubbers and tail gas treatment units), federal fuels regulations (particularly, Tier 3 which mandates a reduction in the sulfur content of blended gasoline), refinery waste water treatment improvements and other similar initiatives. Our refinery operations and related emissions are highly regulated at both federal and state levels, and we invest in our facilities as needed to remain in compliance with these standards. Additionally, when faced with new emissions or fuels standards, we seek to execute projects that facilitate compliance and also improve the operating costs and / or yields of associated refining processes.

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HEP
Each year the Holly Logistic Services, L.L.C. board of directors approves HEP’s annual capital budget, which specifies capital projects that HEP management is authorized to undertake. Additionally, at times when conditions warrant or as new opportunities arise, special projects may be approved. The funds allocated for a particular capital project may be expended over a period in excess of a year, depending on the time required to complete the project. Therefore, HEP’s planned capital expenditures for a given year consist of expenditures approved for capital projects included in its current year capital budget as well as, in certain cases, expenditures approved for capital projects in capital budgets for prior years. The 2018 HEP capital budget is comprised of $8.0 million for maintenance capital expenditures and $40.0 million for expansion capital expenditures. HEP expects the majority of the expansion capital budget to be invested in refined product pipeline expansions, crude system enhancements, new storage tanks, and enhanced blending capabilities at our racks.

Cash Flows – Financing Activities

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016
Net cash flows used for financing activities were $72.6 million for the year ended December 31, 2017 compared to cash flows provided by financing activities of $838.7 million for the year ended December 31, 2016, an increase of $911.3 million. During the year ended December 31, 2017, we received $26.0 million and repaid $26.0 million under the HollyFrontier Credit Agreement and paid $235.5 million in dividends. Also during this period, HEP received $969.0 million and repaid $510.0 million under the HEP Credit Agreement, received $101.8 million in net proceeds from issuance of HEP 6.0% senior notes, paid $309.8 million upon the redemption of HEP's 6.5% senior notes, received $52.1 million in net proceeds from the issuance of its common units and paid distributions of $110.4 million to noncontrolling interests. In addition, for the years ended December 31, 2017 and 2016, $15.9 million and $4.7 million, respectively, of vested shares under our stock compensation plans were withheld for tax withholding obligations. During the year ended December 31, 2016, we received $992.6 million in net proceeds upon issuance of our 5.875% senior notes, received $350.0 million and repaid $350.0 million under a term loan, received $315.0 million and repaid $315.0 million under the HollyFrontier Credit Agreement, purchased $133.4 million in common stock and paid $234.0 million in dividends. In addition, we extinguished our financing obligation with Plains for $39.5 million. Also during this period, HEP received $554.0 million and repaid $713.0 million under the HEP Credit Agreement, received $394.0 million in net proceeds from issuance of HEP 6.0% senior notes, received $125.9 million in net proceeds from the issuance of its common units and paid distributions of $92.6 million to noncontrolling interests.

Year Ended December 31, 2016 Compared to Year Ended December 31, 2015
Net cash flows provided by financing activities were $838.7 million for the year ended December 31, 2016 compared to cash flows used for financing activities of $1,105.6 million for the year ended December 31, 2015, an increase of $1,944.3 million. During the year ended December 31, 2016, we received $992.6 million in net proceeds upon issuance of our 5.875% senior notes, received $350.0 million and repaid $350.0 million under a term loan, received $315.0 million and repaid $315.0 million under the HollyFrontier Credit Agreement, purchased $133.4 million in common stock and paid $234.0 million in dividends. In addition, we extinguished our financing obligation with Plains for $39.5 million. In addition, we withheld shares to pay employee income taxes of $4.7 million for the year ended December 31, 2016, and $6.2 million for the year ended December 31, 2015. Also during this period, HEP received $554.0 million and repaid $713.0 million under the HEP Credit Agreement, received $394.0 million in net proceeds from issuance of HEP 6.0% senior notes, received $125.9 million in net proceeds from the issuance of its common units and paid distributions of $92.6 million to noncontrolling interests. During the year ended December 31, 2015, we purchased $742.8 million in common stock, paid $246.9 million in dividends and paid $155.2 million upon the redemption of our 6.875% senior notes. Also during this period, HEP received $973.9 million and repaid $832.9 million under the HEP Credit Agreement and paid distributions of $83.3 million to noncontrolling interests.

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Contractual Obligations and Commitments

The following table presents our long-term contractual obligations as of December 31, 2017 in total and by period due beginning in 2018. The table below does not include our contractual obligations to HEP under our long-term transportation agreements as these related-party transactions are eliminated in the Consolidated Financial Statements. A description of these agreements is provided under “Holly Energy Partners, L.P.” under Items 1 and 2, “Business and Properties.” Also, the table below does not reflect renewal options on our operating leases that are likely to be exercised.

| | Payments Due by Period | | | | |
|---|---|---|---|---|---|
| Contractual Obligations and Commitments | Total | Less than 1 Year | 1-3 Years | 3-5 Years | Over 5 Years |
| | (In thousands) | | | | |
| HollyFrontier Corporation | | | | | |
| Long-term debt - principal | $1,000,000 | $— | $— | $— | $1,000,000 |
| Long-term debt - interest (1) | 489,583 | 58,750 | 117,500 | 117,500 | 195,833 |
| Supply agreements (2) | 2,853,780 | 526,759 | 744,057 | 672,713 | 910,251 |
| Transportation and storage agreements (3) | 1,407,602 | 142,291 | 239,336 | 197,434 | 828,541 |
| Other long-term obligations | 29,232 | 11,593 | 14,055 | 1,584 | 2,000 |
| Operating leases | 421,344 | 80,904 | 143,832 | 108,931 | 87,677 |
| | 6,201,541 | 820,297 | 1,258,780 | 1,098,162 | 3,024,302 |
| Holly Energy Partners | | | | | |
| Long-term debt - principal (4) | 1,512,000 | — | — | 1,012,000 | 500,000 |
| Long-term debt - interest (5) | 370,300 | 67,800 | 135,600 | 119,400 | 47,500 |
| Pipeline operating leases | 61,038 | 6,425 | 12,850 | 12,850 | 28,913 |
| Operating leases | 4,858 | 1,441 | 1,809 | 659 | 949 |
| Other agreements | 7,872 | 1,652 | 3,304 | 2,916 | — |
| | 1,956,068 | 77,318 | 153,563 | 1,147,825 | 577,362 |
| Total | $8,157,609 | $897,615 | $1,412,343 | $2,245,987 | $3,601,664 |

(1) Interest payments consist of interest on our 5.875% senior notes.

(2) We have long-term supply agreements to secure certain quantities of crude oil, feedstock and other resources used in the production process at market prices. We have estimated future payments under these fixed-quantity agreements expiring between 2018 and 2030 using current market rates. Additionally, commitments include purchases of 20,000 BPD of crude oil under a 10-year agreement to supply our Woods Cross Refinery.

(3) Consists of contractual obligations under agreements with third parties for the transportation of crude oil, natural gas and feedstocks to our refineries and for terminal and storage services under contracts expiring between 2018 and 2030.

(4) HEP's long-term debt consists of the $500.0 million principal balance on the 6% HEP senior notes and $1,012.0 million of outstanding borrowings under the HEP Credit Agreement. The HEP Credit Agreement expires in 2022.

(5) Interest payments consist of interest on the 6% HEP senior notes and interest on long-term debt under the HEP Credit Agreement. Interest on the HEP Credit Agreement debt is based on the weighted average rate of 3.73% at December 31, 2017.

## CRITICAL ACCOUNTING POLICIES

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the

United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities as of the date of the financial statements. Actual results may differ from these estimates under different assumptions or conditions. We consider the following policies to be the most critical to understanding the judgments that are involved and the uncertainties that could impact our results of operations, financial condition and cash flows. For additional information, see Note 1 “Description of Business and Summary of Significant Accounting Policies” in the Notes to Consolidated Financial Statements.

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Inventory Valuation
Inventories related to our refining operations are stated at the lower of cost, using the LIFO method for crude oil and unfinished and finished refined products, or market. In periods of rapidly declining prices, LIFO inventories may have to be written down to market value due to the higher costs assigned to LIFO layers in prior periods. In addition, the use of the LIFO inventory method may result in increases or decreases to cost of sales in years that inventory volumes decline as the result of charging cost of sales with LIFO inventory costs generated in prior periods. At December 31, 2017 and 2016, market values had fallen below historical LIFO inventory costs and, as a result, we recorded lower of cost or market inventory valuation reserves of $223.8 million and $332.5 million, respectively.

At December 31, 2017, our lower of cost or market inventory valuation reserve was $223.8 million. This amount, or a portion thereof, is subject to reversal as a reduction to cost of products sold in subsequent periods as inventories giving rise to the reserve are sold, and a new reserve is established. Such a reduction to cost of products sold could be significant if inventory values return to historical cost price levels. Additionally, further decreases in overall inventory values could result in additional charges to cost of products sold should the lower of cost or market inventory valuation reserve be increased.

Goodwill and Long-lived Assets
As of December 31, 2017, our goodwill balance was $2.2 billion, with goodwill assigned to our Refining, Lubricants and Specialty Products and HEP segments of $1.7 billion, $0.2 billion and $0.3 billion, respectively. Goodwill represents the excess of the cost of an acquired entity over the fair value of the assets acquired and liabilities assumed. Goodwill is not subject to amortization and is tested annually or more frequently if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. Our goodwill impairment testing first entails a comparison of our reporting unit fair values relative to their respective carrying values. If carrying value exceeds fair value for a reporting unit, we measure goodwill impairment as the excess of the carrying amount of reporting unit goodwill over the implied fair value of that goodwill based on estimates of the fair value of all assets and liabilities in the reporting unit.

Our long-lived assets principally consist of our refining assets that are organized as refining asset groups and the assets of our Lubricants and Specialty Products business. The refinery asset groups also constitute our individual refinery reporting units that are used for testing and measuring goodwill impairments. Our long-lived assets are evaluated for impairment by identifying whether indicators of impairment exist and if so, assessing whether the long-lived assets are recoverable from estimated future undiscounted cash flows. The actual amount of impairment loss measured, if any, is equal to the amount by which the asset group’s carrying value exceeds its fair value.

We performed our annual goodwill impairment testing at July 1, 2017 and determined that the fair value of our El Dorado reporting unit exceeded its carrying value by approximately 10%. A reasonable expectation exists that future deterioration in gross margins could result in an impairment of goodwill and the long-lived assets of the El Dorado reporting unit at some point in the future and such impairment charges could be material. Additionally, qualitative testing indicated no impairment of goodwill attributable to our other reporting units.

Contingencies
We are subject to proceedings, lawsuits and other claims related to environmental, labor, product and other matters. We are required to assess the likelihood of any adverse judgments or outcomes to these matters as well as potential ranges of probable losses. A determination of the amount of reserves required, if any, for these contingencies is made after careful analysis of each individual issue. The required reserves may change in the future due to new developments in each matter or changes in approach such as a change in settlement strategy in dealing with these matters.

RISK MANAGEMENT

We use certain strategies to reduce some commodity price and operational risks. We do not attempt to eliminate all market risk exposures when we believe that the exposure relating to such risk would not be significant to our future earnings, financial position, capital resources or liquidity or that the cost of eliminating the exposure would outweigh the benefit.

Commodity Price Risk Management

Our primary market risk is commodity price risk. We are exposed to market risks related to the volatility in crude oil and refined products, as well as volatility in the price of natural gas used in our refining operations. We periodically enter into derivative contracts in the form of commodity price swaps and futures contracts to mitigate price exposure with respect to:

- our inventory positions;
- natural gas purchases;

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- costs of crude oil and related grade differentials;
- prices of refined products; and
- our refining margins.

As of December 31, 2017, we have the following notional contract volumes related to all outstanding derivative contracts used to mitigate commodity price risk:

| Contract Description | Total Outstanding Notional | Notional Contract Volumes by Year of Maturity 2018 | 2019 | 2020 | 2021 | Unit of Measure |
|---|---|---|---|---|---|---|
| Natural gas price swaps - long | 7,200,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | MMBTU |
| NYMEX futures (WTI) - short | 1,175,000 | 1,175,000 | — | — | — | Barrels |
| Forward gasoline and diesel contracts - long | 85,000 | 85,000 | — | — | — | Barrels |
| Forward gasoline and diesel contracts - short | 250,000 | 250,000 | — | — | — | Barrels |
| Forward crude oil contracts - short | 276,751 | 276,751 | — | — | — | Barrels |

The following sensitivity analysis provides the hypothetical effects of market price fluctuations to the commodity positions hedged under our derivative contracts:

| Commodity-based Derivative Contracts | Estimated Change in Fair Value at December 31, 2017 | 2016 |
|---|---|---|
| | (In thousands) | |
| Hypothetical 10% change in underlying commodity prices | $5,451 | $2,272 |

Interest Rate Risk Management

The market risk inherent in our fixed-rate debt is the potential change arising from increases or decreases in interest rates as discussed below.

For the fixed rate HollyFrontier Senior Notes and HEP Senior Notes, changes in interest rates will generally affect fair value of the debt, but not earnings or cash flows. The outstanding principal, estimated fair value and estimated change in fair value (assuming a hypothetical 10% change in the yield-to-maturity rates) for this debt as of December 31, 2017 is presented below:

| | Outstanding Principal | Estimated Fair Value | Estimated Change in Fair Value |
|---|---|---|---|
| | (In thousands) | | |
| HollyFrontier Senior Notes | $1,000,000 | $1,113,470 | $ 31,201 |
| HEP Senior Notes | $500,000 | $525,120 | $ 14,603 |

For the variable rate HEP Credit Agreement, changes in interest rates would affect cash flows, but not the fair value. At December 31, 2017, outstanding borrowings under the HEP Credit Agreement were $1,012.0 million. A hypothetical 10% change in interest rates applicable to the HEP Credit Agreement would not materially affect cash flows.

Our operations are subject to hazards of petroleum processing operations, including fire, explosion and weather-related perils. We maintain various insurance coverages, including business interruption insurance, subject to certain deductibles. We are not fully insured against certain risks because such risks are not fully insurable, coverage is unavailable, or premium costs, in our judgment, do not justify such expenditures.

Financial information is reviewed on the counterparties in order to review and monitor their financial stability and assess their ongoing ability to honor their commitments under the derivative contracts. We have not experienced, nor do we expect to experience, any difficulty in the counterparties honoring their commitments.

We have a risk management oversight committee consisting of members from our senior management. This committee oversees our risk enterprise program, monitors our risk environment and provides direction for activities to mitigate identified risks that may adversely affect the achievement of our goals.

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Item 7A. Quantitative and Qualitative Disclosures About Market Risk

See “Risk Management” under “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Reconciliations to Amounts Reported Under Generally Accepted Accounting Principles

Reconciliations of earnings before interest, taxes, depreciation and amortization (“EBITDA”) to amounts reported under generally accepted accounting principles in financial statements.

Earnings before interest, taxes, depreciation and amortization, which we refer to as EBITDA, is calculated as net income (loss) attributable to HollyFrontier stockholders plus (i) interest expense, net of interest income, (ii) income tax provision, and (iii) depreciation and amortization. EBITDA is not a calculation provided for under GAAP; however, the amounts included in the EBITDA calculation is derived from amounts included in our consolidated financial statements. EBITDA should not be considered as an alternative to net income or operating income as an indication of our operating performance or as an alternative to operating cash flow as a measure of liquidity. EBITDA is not necessarily comparable to similarly titled measures of other companies. EBITDA is presented here because it is a widely used financial indicator used by investors and analysts to measure performance. EBITDA is also used by our management for internal analysis and as a basis for financial covenants.

Set forth below is our calculation of EBITDA.

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| | (In thousands) | | |
| Net income (loss) attributable to HollyFrontier stockholders | $805,395 | $(260,453) | $740,101 |
| Add (subtract) income tax provision | (12,379) | 19,411 | 406,060 |
| Add interest expense (1) | 129,822 | 80,910 | 44,840 |
| Subtract interest income | (3,736) | (2,491) | (3,391) |
| Add depreciation and amortization | 409,937 | 363,027 | 346,151 |
| EBITDA | $1,329,039 | $200,404 | $1,533,761 |

(1) Includes loss on early extinguishment of debt of $12.2 million, $8.7 million and $1.4 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Reconciliations of refinery operating information (non-GAAP performance measures) to amounts reported under generally accepted accounting principles in financial statements.

Refinery gross margin and net operating margin are non-GAAP performance measures that are used by our management and others to compare our refining performance to that of other companies in our industry. We believe these margin measures are helpful to investors in evaluating our refining performance on a relative and absolute basis. Refinery gross margin per produced barrel sold is total refining segment revenues less total refining segment cost of products sold, exclusive of lower of cost or market inventory valuation adjustments, divided by sales volumes of produced refined products sold. Net operating margin per barrel sold is the difference between refinery gross margin and refinery operating expenses per barrel sold. These two margins do not include the non-cash effects of lower of cost or market inventory valuation adjustments, goodwill and asset impairment charges or depreciation and amortization. Each of these component performance measures can be reconciled directly to our consolidated statements of income. Other companies in our industry may not calculate these performance measures in the same manner.

Below are reconciliations to our consolidated statements of income for refinery net operating and gross margin and operating expenses, in each case averaged per produced barrel sold. Due to rounding of reported numbers, some amounts may not calculate exactly.

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Reconciliation of average refining segment net operating margin per produced barrel sold to refinery gross margin to total sales and other revenues

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| | (Dollars in thousands, except per barrel amounts) | | |
| Consolidated | | | |
| Net operating margin per produced barrel sold | $5.46 | $2.52 | $10.06 |
| Add average refinery operating expenses per produced barrel sold | 6.10 | 5.64 | 5.82 |
| Refinery gross margin per produced barrel sold | 11.56 | 8.16 | 15.88 |
| Times produced barrels sold (BPD) | 452,270 | 440,640 | 442,650 |
| Times number of days in period | 365 | 366 | 365 |
| Refining segment gross margin | 1,908,308 | 1,315,998 | 2,565,688 |
| Add rounding | 409 | 1,212 | 1,156 |
| Total refining segment gross margin | 1,908,717 | 1,317,210 | 2,566,844 |
| Add refining segment cost of products sold | 11,009,345 | 9,003,505 | 10,472,268 |
| Refining segment sales and other revenues | 12,918,062 | 10,320,715 | 13,039,112 |
| Add lubricants and specialty products segment sales and other revenues | 1,594,036 | 464,359 | 493,282 |
| Add HEP segment sales and other revenues | 454,362 | 402,043 | 358,875 |
| Subtract corporate, other and eliminations | (715,161) | (651,417) | (653,349) |
| Sales and other revenues | $14,251,299 | $10,535,700 | $13,237,920 |

Reconciliation of average refining segment operating expenses per produced barrel sold to total operating expenses

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| | (Dollars in thousands, except per barrel amounts) | | |
| Consolidated | | | |
| Average refining operating expenses per barrel sold | $6.10 | $5.64 | $5.82 |
| Times barrels sold (BPD) | 452,270 | 440,640 | 442,650 |
| Times number of days in period | 365 | 366 | 365 |
| Refinery operating expenses | 1,006,979 | 909,587 | 940,321 |
| Add (subtract) rounding | (304) | 137 | 308 |
| Total refining segment operating expenses | 1,006,675 | 909,724 | 940,629 |
| Add lubricants and specialty products segment operating expenses | 222,461 | 13,867 | 14,042 |
| Add HEP segment operating expenses | 137,605 | 123,984 | 105,554 |
| Add (subtract) corporate, other and eliminations | (72,507) | (28,736) | 148 |
| Operating expenses (exclusive of depreciation and amortization) | $1,294,234 | $1,018,839 | $1,060,373 |

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Item 8. Financial Statements and Supplementary Data

MANAGEMENT'S REPORT ON ITS ASSESSMENT OF THE COMPANY'S INTERNAL CONTROL OVER FINANCIAL REPORTING

Management of HollyFrontier Corporation (the “Company”) is responsible for establishing and maintaining adequate internal control over financial reporting.

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

On February 1, 2017, we completed the acquisition of Petro-Canada Lubricants Inc. (“PCLI”). We are in the process of integrating operations of PCLI and affiliated entities related to this acquired business (“PCLI business”), including internal controls over financial reporting and, therefore, management's evaluation and conclusion as to the effectiveness of our internal control over financial reporting as of the end of the period covered by this Annual Report on Form 10-K excludes any evaluation of the internal control over financial reporting of the PCLI business. The PCLI business accounted for 12% of the Company's total assets and 8% of total revenues of the Company as of and for the year ended December 31, 2017.

Management assessed the Company's internal control over financial reporting as of December 31, 2017 using the criteria for effective control over financial reporting established in “Internal Control - Integrated Framework” issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on this assessment, management concludes that, as of December 31, 2017, the Company maintained effective internal control over financial reporting.

The Company's independent registered public accounting firm has issued an attestation report on the effectiveness of the Company's internal control over financial reporting as of December 31, 2017. That report appears on page 55.

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of HollyFrontier Corporation

### Opinion on Internal Control over Financial Reporting

We have audited HollyFrontier Corporation's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, HollyFrontier Corporation (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on the COSO criteria.

As indicated in the accompanying Management's Report on its Assessment of the Company's Internal Control Over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of the PCLI business acquired on February 1, 2017, which is included in the 2017 consolidated financial statements of the Company and constituted 12% of total assets as of December 31, 2017 and 8% of revenues for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of the PCLI business.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, cash flows, and equity for each of the three years in the period ended December 31, 2017, and the related notes of the Company and our report dated February 21, 2018 expressed an unqualified opinion thereon.

### Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on its Assessment of the Company's 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/ Ernst & Young LLP

Dallas, Texas
February 21, 2018

Index to Consolidated Financial Statements


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| Consolidated Balance Sheets at December 31, 2017 and 2016 | 58 |
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| Consolidated Statements of Comprehensive Income for the years ended December 31, 2017, 2016 and 2015 | 60 |
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of HollyFrontier Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of HollyFrontier Corporation (the Company) as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, cash flows, and equity for each of the three years in the period ended December 31, 2017, 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 at December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 21, 2018 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures 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.

/s/ Ernst & Young LLP

We have served as the Company’s auditor since 1977.

Dallas, Texas
February 21, 2018

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HOLLYFRONTIER CORPORATION
CONSOLIDATED BALANCE SHEETS
(In thousands, except share data)

| | December 31, 2017 | 2016 |
|---|---|---|
| ASSETS | | |
| Current assets: | | |
| Cash and cash equivalents (HEP: $7,776 and $3,657, respectively) | $630,757 | $710,579 |
| Marketable securities | — | 424,148 |
| Total cash, cash equivalents and short-term marketable securities | 630,757 | 1,134,727 |
| Accounts receivable: Product and transportation (HEP: $12,803 and $7,846, respectively) | 659,530 | 449,036 |
| Crude oil resales | 61,203 | 30,163 |
| | 720,733 | 479,199 |
| Inventories: Crude oil and refined products | 1,409,538 | 970,361 |
| Materials, supplies and other (HEP: $916 and $1,402, respectively) | 220,554 | 165,315 |
| | 1,630,092 | 1,135,676 |
| Income taxes receivable | 44,337 | 68,371 |
| Prepayments and other (HEP: $1,395 and $1,486, respectively) | 36,909 | 33,036 |
| Total current assets | 3,062,828 | 2,851,009 |
| | | |
| Properties, plants and equipment, at cost (HEP: $2,011,915 and $1,702,703, respectively) | 6,523,789 | 5,546,856 |
| Less accumulated depreciation (HEP: $(408,599) and $(337,135), respectively) | (1,810,515) | (1,538,408) |
| | 4,713,274 | 4,008,448 |
| Other assets: Turnaround costs | 231,319 | 217,340 |
| Goodwill (HEP: $310,610 and $288,991, respectively) | 2,244,744 | 2,022,463 |
| Intangibles and other (HEP: $206,167 and $208,975, respectively) | 439,989 | 336,401 |
| | 2,916,052 | 2,576,204 |
| Total assets | $10,692,154 | $9,435,661 |
| | | |
| LIABILITIES AND EQUITY | | |
| Current liabilities: | | |
| Accounts payable (HEP: $14,637 and $10,518, respectively) | $1,220,795 | $935,387 |
| Income taxes payable | 3,159 | — |
| Accrued liabilities (HEP: $33,214 and $37,793, respectively) | 198,756 | 147,842 |
| Total current liabilities | 1,422,710 | 1,083,229 |
| | | |
| Long-term debt (HEP: $1,507,308 and $1,243,912, respectively) | 2,498,993 | 2,235,137 |
| Deferred income taxes (HEP: $525 and $509, respectively) | 647,785 | 620,414 |
| Other long-term liabilities (HEP: $62,590 and $62,971, respectively) | 225,726 | 194,896 |
| | | |
| Equity: | | |
| HollyFrontier stockholders' equity: | | |
| Preferred stock, $1.00 par value – 5,000,000 shares authorized; none issued | — | — |
| Common stock $.01 par value – 320,000,000 shares authorized; 256,015,550 and 255,962,866 shares issued as of December 31, 2017 and December 31, 2016 | 2,560 | 2,560 |
| Additional capital | 4,132,696 | 4,026,805 |
| Retained earnings | 3,346,615 | 2,776,728 |
| Accumulated other comprehensive income | 29,869 | 10,612 |
| | (2,140,911) | (2,135,311) |

| | | |
|---|---|---|
| Common stock held in treasury, at cost – 78,607,928 and 78,617,600 shares as of December 31, 2017 and December 31, 2016, respectively | | |
| Total HollyFrontier stockholders’ equity | 5,370,829 | 4,681,394 |
| Noncontrolling interest | 526,111 | 620,591 |
| Total equity | 5,896,940 | 5,301,985 |
| Total liabilities and equity | $10,692,154 | $9,435,661 |

Parenthetical amounts represent asset and liability balances attributable to Holly Energy Partners, L.P. (“HEP”) as of December 31, 2017 and 2016. HEP is a variable interest entity.

See accompanying notes.

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HOLLYFRONTIER CORPORATION
CONSOLIDATED STATEMENTS OF INCOME
(In thousands, except per share data)

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Sales and other revenues | $14,251,299 | $10,535,700 | $13,237,920 |
| Operating costs and expenses: | | | |
| Cost of products sold (exclusive of depreciation and amortization): | | | |
| Cost of products sold (exclusive of lower of cost or market inventory valuation adjustment) | 11,467,799 | 8,765,927 | 10,239,218 |
| Lower of cost or market inventory valuation adjustment | (108,685) | (291,938) | 226,979 |
| | 11,359,114 | 8,473,989 | 10,466,197 |
| Operating expenses (exclusive of depreciation and amortization) | 1,294,234 | 1,018,839 | 1,060,373 |
| Selling, general and administrative expenses (exclusive of depreciation and amortization) | 264,874 | 125,648 | 120,846 |
| Depreciation and amortization | 409,937 | 363,027 | 346,151 |
| Goodwill and asset impairment | 19,247 | 654,084 | — |
| Total operating costs and expenses | 13,347,406 | 10,635,587 | 11,993,567 |
| Income (loss) from operations | 903,893 | (99,887) | 1,244,353 |
| Other income (expense): | | | |
| Earnings (loss) of equity method investments | 12,510 | 14,213 | (3,738) |
| Interest income | 3,736 | 2,491 | 3,391 |
| Interest expense | (117,597) | (72,192) | (43,470) |
| Loss on early extinguishment of debt | (12,225) | (8,718) | (1,370) |
| Gain (loss) on foreign currency swap | 24,545 | (6,520) | — |
| Gain on foreign currency transactions | 16,921 | — | — |
| Remeasurement gain on HEP pipeline interest acquisitions | 36,254 | — | — |
| Other, net | 826 | (921) | 9,402 |
| | (35,030) | (71,647) | (35,785) |
| Income (loss) before income taxes | 868,863 | (171,534) | 1,208,568 |
| Income tax expense (benefit): | | | |
| Current | 125,143 | (79,181) | 552,196 |
| Deferred | (137,522) | 98,592 | (146,136) |
| | (12,379) | 19,411 | 406,060 |
| Net income (loss) | 881,242 | (190,945) | 802,508 |
| Less net income attributable to noncontrolling interest | 75,847 | 69,508 | 62,407 |
| Net income (loss) attributable to HollyFrontier stockholders | $805,395 | $(260,453) | $740,101 |
| Earnings (loss) per share attributable to HollyFrontier stockholders: | | | |
| Basic | $4.54 | $(1.48) | $3.91 |
| Diluted | $4.52 | $(1.48) | $3.90 |
| Average number of common shares outstanding: | | | |
| Basic | 176,174 | 176,101 | 188,731 |
| Diluted | 177,196 | 176,101 | 188,940 |

See accompanying notes.

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HOLLYFRONTIER CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Net income (loss) | $881,242 | $(190,945) | $802,508 |
| Other comprehensive income (loss): | | | |
| Foreign currency translation adjustment | 22,151 | — | — |
| Securities available-for-sale: | | | |
| Unrealized gain (loss) on marketable securities | (4) | 81 | 29 |
| Reclassification adjustments to net income on sale or maturity of marketable securities | — | 23 | 9 |
| Net unrealized gain (loss) on marketable securities | (4) | 104 | 38 |
| Hedging instruments: | | | |
| Change in fair value of cash flow hedging instruments | 2,919 | (17,625) | (5,847) |
| Reclassification adjustments to net income on settlement of cash flow hedging instruments | 10,448 | 41,585 | (47,492) |
| Amortization of unrealized loss attributable to discontinued cash flow hedges | 1,080 | 1,080 | 1,080 |
| Net unrealized gain (loss) on hedging instruments | 14,447 | 25,040 | (52,259) |
| Other post-retirement benefit obligations: | | | |
| Actuarial loss on pension plans | (1,162) | — | — |
| Actuarial gain (loss) on post-retirement healthcare plans | (1,058) | 2,363 | 3,278 |
| Post-retirement healthcare plans gain reclassified to net income | (3,481) | (3,482) | (3,299) |
| Actuarial gain (loss) on retirement restoration plan | (123) | (9) | 80 |
| Retirement restoration plan loss reclassified to net income | 17 | 15 | 20 |
| Net change in other post-retirement benefit obligations | (5,807) | (1,113) | 79 |
| Other comprehensive income (loss) before income taxes | 30,787 | 24,031 | (52,142) |
| Income tax expense (benefit) | 11,349 | 9,322 | (20,237) |
| Other comprehensive income (loss) | 19,438 | 14,709 | (31,905) |
| Total comprehensive income (loss) | 900,680 | (176,236) | 770,603 |
| Less noncontrolling interest in comprehensive income (loss) | 75,790 | 69,450 | 62,551 |
| Comprehensive income (loss) attributable to HollyFrontier stockholders | $824,890 | $(245,686) | $708,052 |

See accompanying notes.

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HOLLYFRONTIER CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Cash flows from operating activities: | | | |
| Net income (loss) | $881,242 | $(190,945) | $802,508 |
| Adjustments to reconcile net income (loss) to net cash provided by operating activities: | | | |
| Depreciation and amortization | 409,937 | 363,027 | 346,151 |
| Goodwill and asset impairment | 19,247 | 654,084 | — |
| Lower of cost or market inventory valuation adjustment | (108,685) | (291,938) | 226,979 |
| Earnings of equity method investments, inclusive of distributions | 1,450 | 961 | 8,613 |
| Loss (gain) on early extinguishment of debt attributable to unamortized discount / premium | 2,475 | 8,718 | (3,788) |
| Remeasurement gain on pipeline interest acquisitions | (36,254) | — | — |
| Loss (gain) on sale of assets | 508 | (72) | (8,677) |
| Deferred income taxes | (137,522) | 98,592 | (146,136) |
| Equity-based compensation expense | 42,337 | 25,561 | 30,367 |
| Change in fair value – derivative instruments | (4,265) | (12,155) | 38,525 |
| Excess tax expense from equity-based compensation | — | (4,209) | — |
| (Increase) decrease in current assets: | | | |
| Accounts receivable | (115,322) | (127,221) | 238,392 |
| Inventories | (162,297) | (1,869) | (33,717) |
| Income taxes receivable | 50,601 | (68,371) | 11,719 |
| Prepayments and other | (6,753) | 16,555 | 13,291 |
| Increase (decrease) in current liabilities: | | | |
| Accounts payable | 188,975 | 247,603 | (406,339) |
| Income taxes payable | (18,525) | (8,142) | (11,500) |
| Accrued liabilities | 57,227 | 16,142 | (6,924) |
| Turnaround expenditures | (135,104) | (125,254) | (89,365) |
| Other, net | 22,118 | 5,881 | (24,231) |
| Net cash provided by operating activities | 951,390 | 606,948 | 985,868 |
| Cash flows from investing activities: | | | |
| Additions to properties, plants and equipment | (227,449) | (372,195) | (483,034) |
| Additions to properties, plants and equipment – HEP | (44,810) | (107,595) | (193,121) |
| Purchase of PCLI, net of cash acquired | (870,627) | — | — |
| Purchase of pipeline interests - HEP | (245,446) | (42,627) | (55,032) |
| Proceeds from sale of assets | 1,377 | 849 | 19,264 |
| Purchases of marketable securities | (41,565) | (546,632) | (509,338) |
| Sales and maturities of marketable securities | 465,716 | 266,603 | 839,513 |
| Other, net | 3,134 | — | — |
| Net cash used for investing activities | (959,670) | (801,597) | (381,748) |
| Cash flows from financing activities: | | | |
| Borrowings under credit agreements | 995,000 | 869,000 | 973,900 |
| Repayments under credit agreements | (536,000) | (1,028,000) | (832,900) |
| Proceeds from issuance of senior notes – HFC | — | 992,550 | — |
| Proceeds from issuance of senior notes – HEP | 101,750 | 394,000 | — |
| Proceeds from issuance of term loan - HFC | — | 350,000 | — |
| Repayment of term loan - HFC | — | (350,000) | — |

| | | | |
|---|---|---|---|
| Redemption of senior notes - HFC | — | — | (155,156 ) |
| Redemption of senior notes - HEP | (309,750 ) | — | — |
| Repayment of financing obligation | — | (39,500 ) | — |
| Proceeds from issuance of common units - HEP | 52,110 | 125,870 | — |
| Purchase of treasury stock | — | (133,430 ) | (742,823 ) |
| Shares withheld for tax withholding obligations | (15,926 ) | (4,677 ) | (6,242 ) |
| Dividends | (235,508 ) | (234,004 ) | (246,908 ) |
| Distributions to noncontrolling interest | (110,351 ) | (92,607 ) | (83,268 ) |
| Other, net | (13,955 ) | (10,507 ) | (12,175 ) |
| Net cash provided by (used for) financing activities | (72,630 ) | 838,695 | (1,105,572) |
| Effect of exchange rate on cash flow | 1,088 | — | — |
| Cash and cash equivalents: | | | |
| Increase (decrease) for the period | (79,822 ) | 644,046 | (501,452 ) |
| Beginning of period | 710,579 | 66,533 | 567,985 |
| End of period | $630,757 | $710,579 | $66,533 |
| Supplemental disclosure of cash flow information: | | | |
| Cash paid during the period for: | | | |
| Interest | $(124,375) | $(54,074 ) | $(46,442 ) |
| Income taxes, net | $(93,272 ) | $(40,236 ) | $(586,447) |

See accompanying notes.

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HOLLYFRONTIER CORPORATION
CONSOLIDATED STATEMENTS OF EQUITY
(In thousands)

| | HollyFrontier Stockholders' Equity | | | | | | |
|---|---|---|---|---|---|---|---|
| | Common Stock | Additional Capital | Retained Earnings | Accumulated Other Comprehensive Income (Loss) | Treasury Stock | Non-controlling Interest | Total Equity |
| Balance at December 31, 2014 | $2,560 | $4,003,628 | $2,778,577 | $ 27,894 | $(1,289,075) | $ 577,135 | $6,100,719 |
| Net income | — | — | 740,101 | — | — | 62,407 | 802,508 |
| Dividends | — | — | (247,489) | — | — | — | (247,489) |
| Distributions to noncontrolling interest holders | — | — | — | — | — | (83,268) | (83,268) |
| Other comprehensive income (loss), net of tax | — | — | — | (32,049) | — | 144 | (31,905) |
| Issuance of common stock under incentive compensation plans, net of forfeitures | — | (14,958) | — | — | 14,958 | — | — |
| Equity-based compensation, inclusive of tax expense | — | 22,382 | — | — | — | 3,483 | 25,865 |
| Purchase of treasury stock | — | — | — | — | (753,114) | — | (753,114) |
| Purchase of HEP units for restricted grants | — | — | — | — | — | (3,555) | (3,555) |
| Other | — | — | — | — | — | 12 | 12 |
| Balance at December 31, 2015 | $2,560 | $4,011,052 | $3,271,189 | $ (4,155) | $(2,027,231) | $ 556,358 | $5,809,773 |
| Net income (loss) | — | — | (260,453) | — | — | 69,508 | (190,945) |
| Dividends | — | — | (234,008) | — | — | — | (234,008) |
| Distributions to noncontrolling interest holders | — | — | — | — | — | (92,607) | (92,607) |
| Other comprehensive income (loss), net of tax | — | — | — | 14,767 | — | (58) | 14,709 |
| Equity attributable to HEP common unit issuances, net of tax | — | 23,110 | — | — | — | 88,166 | 111,276 |
| Issuance of common stock under incentive compensation plans, net of forfeitures | — | (25,982) | — | — | 25,982 | — | — |
| Equity-based compensation, inclusive of tax expense | — | 18,625 | — | — | — | 2,727 | 21,352 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Purchase of treasury stock | — | — | — | — | (134,062 ) | — | (134,062 ) |
| Purchase of HEP units for restricted grants | — | — | — | — | — | (3,521 ) | (3,521 ) |
| Other | — | — | — | — | — | 18 | 18 |
| Balance at December 31, 2016 | $2,560 | $4,026,805 | $2,776,728 | $ 10,612 | $(2,135,311) | $ 620,591 | $5,301,985 |
| Net income | — | — | 805,395 | — | — | 75,847 | 881,242 |
| Dividends | — | — | (235,508 ) | — | — | — | (235,508 ) |
| Distributions to noncontrolling interest holders | — | — | — | — | — | (110,351 ) | (110,351 ) |
| Other comprehensive income (loss), net of tax | — | — | — | 19,495 | — | (57 ) | 19,438 |
| Equity attributable to HEP common unit issuances, net of tax | — | 69,802 | — | (238 ) | — | (61,390 ) | 8,174 |
| Equity awards issued in PCLI acquisition | — | 6,600 | — | — | — | — | 6,600 |
| Issuance of common stock under incentive compensation plans, net of forfeitures | — | (10,326 ) | — | — | 10,326 | — | — |
| Equity-based compensation | — | 39,815 | — | — | — | 2,522 | 42,337 |
| Purchase of treasury stock | — | — | — | — | (15,926 ) | — | (15,926 ) |
| Purchase of HEP units for restricted grants | — | — | — | — | — | (605 ) | (605 ) |
| Other | — | — | — | — | — | (446 ) | (446 ) |
| Balance at December 31, 2017 | $2,560 | $4,132,696 | $3,346,615 | $ 29,869 | $(2,140,911) | $ 526,111 | $5,896,940 |

See accompanying notes.

HOLLYFRONTIER CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1: Description of Business and Summary of Significant Accounting Policies

Description of Business: References herein to HollyFrontier Corporation (“HollyFrontier”) include HollyFrontier and its consolidated subsidiaries. In accordance with the Securities and Exchange Commission’s (“SEC”) “Plain English” guidelines, this Annual Report on Form 10-K has been written in the first person. In these financial statements, the words “we,” “our,” “ours” and “us” refer only to HollyFrontier and its consolidated subsidiaries or to HollyFrontier or an individual subsidiary and not to any other person, with certain exceptions. Generally, the words “we,” “our,” “ours” and “us” include Holly Energy Partners, L.P. (“HEP”) and its subsidiaries as consolidated subsidiaries of HollyFrontier, unless when used in disclosures of transactions or obligations between HEP and HollyFrontier or its other subsidiaries. These financial statements contain certain disclosures of agreements that are specific to HEP and its consolidated subsidiaries and do not necessarily represent obligations of HollyFrontier. When used in descriptions of agreements and transactions, “HEP” refers to HEP and its consolidated subsidiaries.

We are principally an independent petroleum refiner that produces high-value light products such as gasoline, diesel fuel, jet fuel, specialty lubricant products, and specialty and modified asphalt. We own and operate petroleum refineries that serve markets throughout the Mid-Continent, Southwest and Rocky Mountain regions of the United States. In addition, we own and operate a lubricant production facility with retail and wholesale marketing of its products through a global sales network with locations in Canada, United States, Europe and China. As of December 31, 2017, we:

- owned and operated a petroleum refinery in El Dorado, Kansas (the “El Dorado Refinery”), two refinery facilities located in Tulsa, Oklahoma (collectively, the “Tulsa Refineries”), a refinery in Artesia, New Mexico that is operated in conjunction with crude oil distillation and vacuum distillation and other facilities situated 65 miles away in Lovington, New Mexico (collectively, the “Navajo Refinery”), a refinery located in Cheyenne, Wyoming (the “Cheyenne Refinery”) and a refinery in Woods Cross, Utah (the “Woods Cross Refinery”);
- owned and operated Petro-Canada Lubricants Inc. (“PCLI”) located in Mississauga, Ontario which produces base oils and other specialized lubricant products;
- owned and operated HollyFrontier Asphalt Company (“HFC Asphalt”) which operates various asphalt terminals in Arizona, New Mexico and Oklahoma; and
- owned a 59% limited partner interest and a non-economic general partner interest in HEP, a variable interest entity (“VIE”).

On October 29, 2016, our wholly-owned subsidiary, 9952110 Canada Inc., entered into a share purchase agreement with Suncor Energy Inc. (“Suncor”) to acquire 100% of the outstanding capital stock of PCLI. The acquisition closed on February 1, 2017. See Note 2 for additional information.

Principles of Consolidation: Our consolidated financial statements include our accounts and the accounts of partnerships and joint ventures that we control through an ownership interest greater than 50% or through a controlling financial interest with respect to variable interest entities. All significant intercompany transactions and balances have been eliminated.

Variable Interest Entities: HEP is a VIE as defined under U.S. generally accepted accounting principles (“GAAP”). A VIE is a legal entity whose equity owners do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support or, as a group, the equity holders lack the power, through voting rights, to direct the activities that most significantly impact the entity's financial performance, the obligation to absorb the entity's expected losses or rights to expected residual returns. As the general partner of HEP, we have the sole ability to direct the activities of HEP that most significantly impact HEP's financial performance, and therefore as HEP's primary beneficiary, we consolidate HEP.

Use of Estimates: The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

Cash Equivalents: We consider all highly liquid instruments with a maturity of three months or less at the date of purchase to be cash equivalents. Cash equivalents are stated at cost, which approximates market value and are primarily invested in highly-rated instruments issued by government or municipal entities with strong credit standings.

Marketable Securities: We consider all marketable debt securities with maturities greater than three months at the date of purchase to be marketable securities. Our marketable securities consist of commercial paper, corporate debt securities and government and municipal debt securities with the maximum maturity or put date of any individual issue generally not more than two years, while the maximum duration of the portfolio of investments is not greater than one year. These instruments are classified as available-for-sale, and as a result, are reported at fair value. Unrealized gains and losses, net of related income taxes, are reported as a component of accumulated other comprehensive income.

Balance Sheet Offsetting: We purchase and sell inventories of crude oil with certain same-parties that are net settled in accordance with contractual net settlement provisions. Our policy is to present such balances on a net basis because it more appropriately presents our economic resources (accounts receivable) and claims against us (accounts payable) and the future cash flows associated with such assets and liabilities.

Accounts Receivable: Our accounts receivable consist of amounts due from customers that are primarily companies in the petroleum industry. Credit is extended based on our evaluation of the customer's financial condition, and in certain circumstances collateral, such as letters of credit or guarantees, is required. We reserve for doubtful accounts based on our historical loss experience as well as specific accounts identified as high risk, which historically have been minimal. Credit losses are charged to the allowance for doubtful accounts when an account is deemed uncollectible. Our allowance for doubtful accounts was $3.6 million and $2.3 million at December 31, 2017 and 2016, respectively.

Accounts receivable attributable to crude oil resales generally represent the sell side of excess crude oil sales to other purchasers and / or users in cases when our crude oil supplies are in excess of our immediate needs as well as certain reciprocal buy / sell exchanges of crude oil. At times we enter into such buy / sell exchanges to facilitate the delivery of quantities to certain locations. In many cases, we enter into net settlement agreements relating to the buy / sell arrangements, which may mitigate credit risk.

Inventories: Inventories related to our refining operations are stated at the lower of cost, using the last-in, first-out (“LIFO”) method for crude oil and unfinished and finished refined products, or market. Cost, consisting of raw material, transportation and conversion costs, is determined using the LIFO inventory valuation methodology and market is determined using current replacement costs. Under the LIFO method, the most recently incurred costs are charged to cost of sales and inventories are valued at the earliest acquisition costs. In periods of rapidly declining prices, LIFO inventories may have to be written down to market value due to the higher costs assigned to LIFO layers in prior periods. In addition, the use of the LIFO inventory method may result in increases or decreases to cost of sales in years that inventory volumes decline as the result of charging cost of sales with LIFO inventory costs generated in prior periods. An actual valuation of inventory under the LIFO method is made at the end of each year based on the inventory levels at that time. Accordingly, interim LIFO calculations are based on management's estimates of expected year-end inventory levels and are subject to the final year-end LIFO inventory valuation.

Inventories of our Petro-Canada Lubricants business are stated at the lower of cost, using the first-in, first-out (“FIFO”) method, or net realizable value.

Inventories consisting of process chemicals, materials and maintenance supplies and RINs are stated at the lower of weighted-average cost or net realizable value.

Derivative Instruments: All derivative instruments are recognized as either assets or liabilities in our consolidated balance sheets and are measured at fair value. Changes in the derivative instrument's fair value are recognized in earnings unless specific hedge accounting criteria are met. See Note 13 for additional information.

Properties, plants and equipment: Properties, plants and equipment are stated at cost. Depreciation is provided by the straight-line method over the estimated useful lives of the assets, primarily 15 to 32 years for refining, pipeline and terminal facilities, 10 to 40 years for buildings and improvements, 5 to 30 years for other fixed assets and 5 years for vehicles.

Asset Retirement Obligations: We record legal obligations associated with the retirement of long-lived assets that result from the acquisition, construction, development and / or the normal operation of long-lived assets. The fair value of the estimated cost to retire a tangible long-lived asset is recorded as a liability with the associated retirement costs capitalized as part of the asset's carrying amount in the period in which it is incurred and when a reasonable estimate of the fair value of the liability can be made. If a reasonable estimate cannot be made at the time the liability is incurred, we record the liability when sufficient information is available to estimate the liability's fair value. Certain of our refining assets have no recorded liability for asset retirement obligations since the timing of any retirement and related costs are currently indeterminable.

Our asset retirement obligations were $24.8 million and $22.1 million at December 31, 2017 and 2016, respectively, which are included in “Other long-term liabilities” in our consolidated balance sheets. Accretion expense was insignificant for the years ended December 31, 2017, 2016 and 2015.

Intangibles, Goodwill and long-lived assets:  Intangible assets are assets (other than financial assets) that lack physical substance, and goodwill represents the excess of the cost of an acquired entity over the fair value of the assets acquired and liabilities assumed. Goodwill acquired in a business combination and intangibles with indefinite useful lives are not amortized, whereas intangible assets with finite useful lives are amortized on a straight-line basis. 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. Our goodwill impairment testing first entails a comparison of our reporting unit fair values relative to their respective carrying values. If carrying value exceeds fair value for a reporting unit, we measure goodwill impairment as the excess of the carrying amount of reporting unit goodwill over the implied fair value of that goodwill based on estimates of the fair value of all assets and liabilities in the reporting unit.

Our long-lived assets principally consist of our refining assets that are organized as refining asset groups and our lubricants and specialty products business. The refinery asset groups also constitute our individual refinery reporting units that are used for testing and measuring goodwill impairments. Our long-lived assets are evaluated for impairment by identifying whether indicators of impairment exist and if so, assessing whether the long-lived assets are recoverable from estimated future undiscounted cash flows. The actual amount of impairment loss measured, if any, is equal to the amount by which the asset group’s carrying value exceeds its fair value.

See Note 10 for information regarding goodwill and long-lived asset impairment charges recorded during the years ended December 31, 2017 and 2016.

Upon our acquisition of PCLI, we recognized intangibles, including trademarks, patents, technical know-how and customer relationships, totaling $102.1 million that are being amortized on a straight-line basis over periods ranging from 10 to 20 years. At December 31, 2017, the balance of these intangibles was $100.0 million, and is presented net of accumulated amortization of $5.9 million in “Intangibles and other” in our consolidated balance sheets.

Our consolidated HEP assets include intangible assets consisting of third-party transportation agreements and customer relationships. These intangible assets are amortized on a straight-line basis over periods ranging from 10 to 30 years. Amortization expense was $2.6 million and $2.0 million for the years ended December 31, 2017 and 2016, respectively, and expected to approximate $8.0 million annually over the next five years. The balances of these intangible assets were $95.2 million and $36.5 million at December 31, 2017, and 2016, respectively, and are presented net of accumulated amortization of $26.3 million and $23.7 million, respectively, in “Intangibles and other” in our consolidated balance sheets.

Investments in Joint Ventures: We consolidate the financial and operating results of joint ventures in which we have an ownership interest of greater than 50% or a controlling interest with respect to VIE's, and use the equity method of accounting for investments in which we have a noncontrolling interest, yet have significant influence over the entity. Under the equity method of accounting, we record our pro-rata share of earnings, and contributions to and distributions from joint ventures as adjustments to our investment balance.

HEP has a 50% interest in Osage Pipe Line Company, LLC, the owner of a pipeline running from Cushing, Oklahoma to El Dorado, Kansas (the "Osage Pipeline") and a 50% interest in Cheyenne Pipeline, LLC, the owner of a pipeline running from Fort Laramie, Wyoming to Cheyenne, Wyoming (the "Cheyenne Pipeline"), that are accounted for using the equity method of accounting. As of December 31, 2017, HEP's underlying equity and recorded investment balances in the joint ventures are $39.3 million and $85.3 million, respectively. The differences are being amortized as adjustments to HEP's pro-rata share of earnings in the joint ventures.

Revenue Recognition: Refined product sales and related cost of sales are recognized when products are shipped and title has passed to customers. HEP recognizes pipeline transportation revenues as products are shipped through its pipelines. All revenues are reported inclusive of shipping and handling costs billed and exclusive of any taxes billed to customers. Shipping and handling costs incurred are reported in cost of products sold.

Our Petro-Canada Lubricants business has sales agreements with marketers and distributors that provide certain rights of return or provisions for the repurchase of products previously sold to them. Under these agreements with Canadian marketers, revenues and cost of revenues are deferred until the products have been sold to end customers, and for sales to U.S. distributors, revenues are recognized when products are shipped to the distributors, net of allowances for returns that are expected to be repurchased from the distributors. In both cases, repurchased products are subsequently sold directly to end customers.

Cost Classifications: Costs of products sold include the cost of crude oil, other feedstocks, blendstocks and purchased finished products, inclusive of transportation costs. We purchase crude oil that at times exceeds the supply needs of our refineries. Quantities in excess of our needs are sold at market prices to purchasers of crude oil that are recorded on a gross basis with the sales price recorded as revenues and the corresponding acquisition cost as cost of products sold. Additionally, we enter into buy / sell exchanges of crude oil with certain parties to facilitate the delivery of quantities to certain locations that are netted at cost. Operating expenses include direct costs of labor, maintenance materials and services, utilities, marketing expense and other direct operating costs. Selling, general and administrative expenses include compensation, professional services and other support costs.

Deferred Maintenance Costs: Our refinery units require regular major maintenance and repairs which are commonly referred to as “turnarounds.” Catalysts used in certain refinery processes also require regular “change-outs.” The required frequency of the maintenance varies by unit and by catalyst, but generally is every two to five years. Turnaround costs are deferred and amortized over the period until the next scheduled turnaround. Other repairs and maintenance costs are expensed when incurred. Deferred turnaround and catalyst amortization expense was $112.9 million, $110.6 million and $107.8 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Environmental Costs: Environmental costs are charged to operating expenses if they relate to an existing condition caused by past operations and do not contribute to current or future revenue generation. We have ongoing investigations of environmental matters at various locations and routinely assess our recorded environmental obligations, if any, with respect to such matters. Liabilities are recorded when site restoration and environmental remediation, cleanup and other obligations are either known or considered probable and can be reasonably estimated. Such estimates are undiscounted and require judgment with respect to costs, time frame and extent of required remedial and clean-up activities and are subject to periodic adjustments based on currently available information. Recoveries of environmental costs through insurance, indemnification arrangements or other sources are included in other assets to the extent such recoveries are considered probable.

Contingencies: We are subject to proceedings, lawsuits and other claims related to environmental, labor, product and other matters. We are required to assess the likelihood of any adverse judgments or outcomes to these matters as well as potential ranges of probable losses. A determination of the amount of reserves required, if any, for these contingencies is made after careful analysis of each individual issue. The required reserves may change in the future due to new developments in each matter or changes in approach such as a change in settlement strategy in dealing with these matters.

Foreign Currency Translation: The functional currency of PCLI and its affiliated non-U.S. Petro-Canada Lubricants entities includes the Canadian dollar, the euro and Chinese renminbi. Balance sheet accounts are translated into U.S. dollars using exchange rates in effect as of the balance sheet date. Revenue and expense accounts are translated using the weighted-average exchange rates during the period presented. Foreign currency translation adjustments are recorded as a component of accumulated other comprehensive income.

In connection with our PCLI acquisition on February 1, 2017, we issued intercompany notes to initially fund certain of our foreign businesses. Remeasurement adjustments resulting from the conversion of such intercompany financing amounts to functional currencies are recorded as gains and losses as a component of other income (expense) in the income statement. Such adjustments are not recorded to the Lubricants and Specialty Products segment operations, but to corporate and other. See Note 20 for additional information on our segments.

HOLLYFRONTIER CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
Continued

Income Taxes: Provisions for income taxes include deferred taxes resulting from temporary differences in income for financial and tax purposes, using the liability method of accounting for income taxes. The liability method requires the effect of tax rate changes on deferred income taxes to be reflected in the period in which the rate change was enacted. The liability method also requires that deferred tax assets be reduced by a valuation allowance unless it is more likely than not that the assets will be realized.

Potential interest and penalties related to income tax matters are recognized in income tax expense. We believe we have appropriate support for the income tax positions taken and to be taken on our income tax returns and that our accruals for tax liabilities are adequate for all open years based on an assessment of many factors, including past experience and interpretations of tax law applied to the facts of each matter.

Inventory Repurchase Obligations: We periodically enter into same-party sell / buy transactions, whereby we sell certain refined product inventory and subsequently repurchase the inventory in order to facilitate delivery to certain locations. Such sell / buy transactions are accounted for as inventory repurchase obligations under which proceeds received under the initial sell is recognized as an inventory repurchase obligation that is subsequently reversed when the inventory is repurchased. For the years ended December 31, 2017, 2016 and 2015, we received proceeds of $47.4 million, $57.0 million and $115.4 million and subsequently repaid $49.8 million, $58.0 million and $115.3 million, respectively, under these sell / buy transactions.

New Accounting Pronouncements

Hedge Accounting
In August 2017, Accounting Standard Update (“ASU”) 2017-12, “Derivatives and Hedging: Targeted Improvements to Accounting for Hedging Activities,” was issued amending hedge accounting recognition and presentation requirements, including elimination of the requirement to separately measure and report hedge ineffectiveness, and eases certain documentation and assessment requirements. This standard has an effective date of January 1, 2019. We do not expect adoption of this standard to have a material impact on our financial condition, results of operations or cash flows.

Post-retirement Benefit Cost
In March 2017, ASU 2017-07, “Improving the Presentation of Net Periodic Pension Cost and Net Periodic Post-retirement Benefit Cost,” was issued amending current GAAP related to the income statement presentation of the components of net periodic post-retirement cost (credit). This standard has an effective date of January 1, 2018. We do not expect adoption of this standard to have a material impact on our financial condition, results of operations or cash flows.

Share-Based Compensation
In March 2016, ASU 2016-09, “Improvements to Employee Share-Based Payment Accounting,” was issued which simplifies the accounting for employee share-based payment transactions, including the accounting for income taxes, forfeitures and statutory tax withholding requirements, as well as classification in the statement of cash flows. We adopted this standard effective January 1, 2017 on a prospective basis with the excess tax expense from stock-based compensation recognized as a discrete item in our provision for income taxes. Excess tax expense for the year ended December 31, 2017 totaled $0.7 million. The new standard also requires that employee taxes paid when an employer withholds shares for tax-withholding purposes be reported as financing activities in the statement of cash flows on a retrospective basis. Previously, this activity was included in operating activities. The impact of this change for the

years ended December 31, 2017, 2016 and 2015 was $15.9 million, $4.7 million and $6.2 million, respectively. Finally, consistent with our existing policy, we have elected to account for forfeitures on an estimated basis.

Leases

In February 2016, ASU 2016-02, “Leases,” was issued requiring leases to be measured and recognized as a lease liability, with a corresponding right-of-use asset on the balance sheet. This standard has an effective date of January 1, 2019, and we are evaluating the impact of this standard. In preparing for adoption, we have identified, reviewed and evaluated contracts containing lease and embedded lease arrangements. Additionally, we have acquired software and are implementing systems to facilitate lease capture and related accounting treatment.

HOLLYFRONTIER CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
Continued

Inventories Measurement
In July 2015, ASU 2015-11, "Inventory - Simplifying the Measurement of Inventory," was issued requiring measurement of inventories, other than inventories accounted for using the LIFO method, to be measured at the lower of cost or net realizable value. Net realizable value is defined as the estimated selling price in the ordinary course of business less reasonable, predictable cost of completion, disposal and transportation. We adopted this standard effective January 1, 2017 for our affected inventories, which is primarily the inventory of our Petro-Canada Lubricants business that is valued on a FIFO basis. Adoption had no material effect on our financial condition, results of operations or cash flows.

Revenue Recognition
In May 2014, ASU 2014-09, "Revenue from Contracts with Customers" was issued requiring revenue to be recognized when promised goods or services are transferred to customers in an amount that reflects the expected consideration for these goods or services. This standard has an effective date of January 1, 2018, and we anticipate using the modified retrospective implementation method, whereby a cumulative effect adjustment is recorded to retained earnings as of the date of initial application. In preparing for adoption, we have evaluated the terms, conditions and performance obligations under our existing contracts with customers. Furthermore, we have implemented policies to comply with this new standard, which we do not anticipate will have a material impact on our financial condition, results of operations or cash flows.

NOTE 2: PCLI Acquisition

On October 29, 2016, our wholly-owned subsidiary, 9952110 Canada Inc., entered into a share purchase agreement with Suncor to acquire 100% of the outstanding capital stock of PCLI. The acquisition closed on February 1, 2017. Cash consideration paid was $862.1 million, or $1.125 billion in Canadian dollars. PCLI is located in Mississauga, Ontario, Canada and is a producer of lubricant products such as base oils, white oils, specialty products and finished lubricants. The operations of our Petro-Canada Lubricants business also include marketing of these products to both retail and wholesale outlets through a global sales network with locations in Canada, the United States, Europe and China.

Aggregate consideration totaled $906.7 million and consists of $862.1 million in cash paid to Suncor at acquisition, a closing date working capital settlement of $30.6 million that was paid to Suncor in the second quarter of 2017, an accrued payable in the amount of $7.4 million, and $6.6 million representing a portion of the fair value of replacement restricted stock unit awards issued to PCLI employees that relate to pre-acquisition services.

This transaction is accounted for as a business combination using the acquisition method of accounting, with the purchase price allocated to the fair value of the acquired PCLI assets and liabilities as of the February 1 acquisition date, with the excess purchase price recorded as goodwill assigned to our Lubricants and Specialty Products segment. This goodwill is not deductible for income tax purposes.

The following summarizes the PCLI value of assets and liabilities acquired on February 1, 2017:

| | (in millions) |
|---|---|
| Cash and cash equivalents | $ 21.6 |
| Accounts receivable and other current assets | 118.5 |

| | |
|---|---|
| Inventories | 214.9 |
| Properties, plants and equipment | 438.0 |
| Goodwill | 194.8 |
| Intangibles, precious metals and other noncurrent assets | 124.3 |
| Accounts payable and accrued liabilities | (87.4 ) |
| Deferred income tax liabilities | (105.4 ) |
| Other long-term liabilities | (12.6 ) |
| Net assets acquired | $ 906.7 |

Our consolidated financial and operating results reflect the operations of our Petro-Canada Lubricants business beginning February 1, 2017. Our results of operations for the year ended December 31, 2017 included revenues and income before income taxes of $1,125.3 million and $71.8 million, respectively, related to these operations.

As of December 31, 2017, we have incurred $27.9 million in incremental direct acquisition and integration costs that principally relate to legal, advisory and other professional fees and are presented as selling, general and administrative expenses.

## NOTE 3: Holly Energy Partners

HEP is a publicly held master limited partnership that owns and operates logistic assets consisting of petroleum product and crude oil pipelines, terminals, tankage, loading rack facilities and refinery processing units that principally support our refining and marketing operations in the Mid-Continent, Southwest and Rocky Mountain regions of the United States and Delek's refinery in Big Spring, Texas. Additionally, HEP owns a 75% interest in UNEV Pipeline, LLC ("UNEV"), the owner of pipeline running from Woods Cross, Utah to Las Vegas, Nevada (the "UNEV Pipeline") and associated product terminals, and a 50% ownership interest in each of the Osage Pipeline and the Cheyenne Pipeline.

At December 31, 2017, we owned a 59% limited partner interest and a non-economic general partner interest in HEP. As the general partner of HEP, we have the sole ability to direct the activities that most significantly impact HEP's financial performance, and therefore as HEP's primary beneficiary, we consolidate HEP.

HEP has two primary customers (including us) and generates revenues by charging tariffs for transporting petroleum products and crude oil though its pipelines, by charging fees for terminalling refined products and other hydrocarbons, and storing and providing other services at its storage tanks and terminals. Under our long-term transportation agreements with HEP (discussed further below), we accounted for 83% of HEP's total revenues for the year ended December 31, 2017. We do not provide financial or equity support through any liquidity arrangements and / or debt guarantees to HEP.

HEP has outstanding debt under a senior secured revolving credit agreement and its senior notes. HEP's creditors have no recourse to our assets. Furthermore, our creditors have no recourse to the assets of HEP and its consolidated subsidiaries. See Note 12 for a description of HEP's debt obligations.

HEP has risk associated with its operations. If a major customer of HEP were to terminate its contracts or fail to meet desired shipping or throughput levels for an extended period of time, revenue would be reduced and HEP could suffer substantial losses to the extent that a new customer is not found. In the event that HEP incurs a loss, our operating results will reflect HEP's loss, net of intercompany eliminations, to the extent of our ownership interest in HEP at that point in time.

### SLC Pipeline and Frontier Pipeline

On October 31, 2017, HEP acquired the remaining 75% interest in SLC Pipeline LLC, the owner of a pipeline that serves refineries in the Salt Lake City, Utah area (the "SLC Pipeline"), and the remaining 50% interest in Frontier Aspen LLC, the owner of a pipeline running from Wyoming to Frontier Station, Utah (the "Frontier Pipeline"), from subsidiaries of Plains All American Pipeline, L.P. ("Plains") for cash consideration of $250.0 million.

These acquisitions were accounted for as a business combination achieved in stages. HEP’s preexisting equity method investments in SLC Pipeline and Frontier Aspen were remeasured at an acquisition date fair value of $112.0 million, since HEP acquired a controlling interest, and a gain was recognized on the remeasurement of $36.3 million. The fair value of HEP's preexisting equity method investments in SLC Pipeline and Frontier Aspen was estimated using Level 3 inputs under the income method for these entities, adjusted for lack of control and marketability.

The total consideration of $362.0 million, consisting of cash consideration of $250.0 million and the fair value of HEP's preexisting equity method investments in SLC Pipeline and Frontier Aspen of $112.0 million, was allocated to the acquisition date fair value of assets and liabilities acquired as of the October 31, 2017 acquisition date, with the excess purchase price recorded as goodwill. The fair values are preliminary, and therefore, may change once all needed information has become available and valuations are complete.

Woods Cross Assets

On October 3, 2016, HEP acquired from us all the membership interests of Woods Cross Operating LLC, which owns the crude unit, FCCU and polymerization unit of the first phase of our Woods Cross Refinery expansion project that was completed in the second quarter of 2016, for cash consideration of approximately $278.0 million.

In connection with this transaction, we entered into 15-year tolling agreements containing minimum quarterly throughput commitments that provide minimum annualized payments to HEP of $56.7 million.

HOLLYFRONTIER CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
Continued

Cheyenne Pipeline
On June 3, 2016, HEP acquired a 50% interest in Cheyenne Pipeline LLC, owner of the Cheyenne Pipeline, in exchange for a contribution of $42.6 million in cash to Cheyenne Pipeline LLC. Cheyenne Pipeline will continue to be operated by an affiliate of Plains, which owns the remaining 50% interest. The 87-mile crude oil pipeline runs from Fort Laramie, Wyoming to Cheyenne, Wyoming and has an 80,000 BPD capacity.

Tulsa Tanks
On March 31, 2016, HEP acquired crude oil tanks located at our Tulsa Refineries from Plains for $39.5 million. Previously in 2009, we sold these tanks to Plains and leased them back, and due to our continuing interest in the tanks, we accounted for the transaction as a financing arrangement. Accordingly, the tanks remained on our balance sheet and were depreciated for accounting purposes, and the proceeds received from Plains were recorded as a financing obligation and presented as a component of outstanding debt.

In accounting for HEP’s March 2016 purchase from Plains, the amount paid was recorded against our outstanding financing obligation balance of $30.8 million, with the excess $8.7 million resulting in a loss on early extinguishment of debt.

Magellan Asset Exchange
On February 22, 2016, we obtained a 50% membership interest in Osage Pipe Line Company, LLC (“Osage”) in exchange for a 20-year terminalling services agreement, whereby, a subsidiary of Magellan Midstream Partners (“Magellan Midstream”) will provide terminalling services for all of our products originating in Artesia, New Mexico that require terminalling in or through El Paso, Texas. Under the agreement, we will be charged tariffs based on the volumes of refined product processed. Osage is the owner of the Osage Pipeline, a 135-mile pipeline that transports crude oil from Cushing, Oklahoma to our El Dorado Refinery in Kansas and also has a connection to the Jayhawk pipeline that services the CHS refinery in McPherson, Kansas. This exchange was accounted for at fair value, whereby the 50% membership interest in the Osage Pipeline was recorded at fair value and an offsetting residual deferred credit in the amount of $38.9 million was recorded, which will be amortized to cost of products sold over the 20-year service period. No gain or loss was recorded for this exchange.

Also on February 22, 2016, we contributed the 50% membership interest in Osage to HEP, and in exchange received HEP's El Paso terminal. Pursuant to this exchange, HEP agreed to build two connections to Magellan Midstream's El Paso terminal. In addition, HEP agreed to become the operator of the Osage Pipeline. This exchange was accounted for at carry-over basis with no resulting gain or loss.

El Dorado Asset Transaction
On November 1, 2015, HEP acquired from us newly constructed naphtha fractionation and hydrogen generation units at our El Dorado Refinery for cash consideration of $62.0 million. In connection with this transaction, we entered into 15-year tolling agreements containing minimum quarterly throughput commitments that provide minimum annualized payments to HEP of $15.1 million.

Frontier Pipeline Transaction
On August 31, 2015, HEP purchased a 50% interest in Frontier Aspen LLC (previously known as Frontier Pipeline Company), owner of the Frontier Pipeline, from an affiliate of Enbridge, Inc. for $55.0 million. The 289-mile crude oil pipeline runs from Casper, Wyoming to Frontier Station, Utah, has a 72,000 BPD capacity and supplies Canadian and Rocky Mountain crudes to Salt Lake City area refiners through a connection to the SLC Pipeline. As noted above,

HEP acquired the remaining 50% interest on October 31, 2017.

Transportation Agreements

HEP serves our refineries under long-term pipeline, terminal and tankage throughput agreements and refinery processing tolling agreements expiring from 2020 through 2036. Under these agreements, we pay HEP fees to transport, store and process throughput volumes of refined products, crude oil and feedstocks on HEP's pipelines, terminals, tankage, loading rack facilities and refinery processing units that result in minimum annual payments to HEP including UNEV (a consolidated subsidiary of HEP). Under these agreements, the agreed upon tariff rates are subject to annual tariff rate adjustments on July 1 at a rate based upon the percentage change in Producer Price Index or Federal Energy Regulatory Commission index. As of December 31, 2017, these agreements result in minimum annualized payments to HEP of $324.5 million.

Our transactions with HEP and fees paid under our transportation agreements with HEP and UNEV are eliminated and have no impact on our consolidated financial statements.

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Incentive Distribution Rights Simplification Agreement
On October 31, 2017, we closed on an equity restructuring transaction with HEP pursuant to which our incentive distribution rights were canceled and our 2% general partner interest in HEP was converted into a non-economic general partner interest in HEP. In consideration, we received 37,250,000 HEP common units. In addition, we agreed to waive $2.5 million of limited partner cash distributions for each of twelve consecutive quarters beginning with the first quarter the units issued were eligible to receive distributions as consideration.

HEP Private Placement Agreements
On January 25, 2018, HEP entered into a common unit purchase agreement in which certain purchasers agreed to purchase in a private placement 3,700,000 HEP common units, representing limited partner interests, at a price of $29.73 per common unit. The private placement closed on February 6, 2018, at which time HEP received proceeds of approximately $110.0 million, which were used to repay indebtedness under the HEP Credit Agreement. After this common unit issuance, our limited partner interest in HEP is 57%.

On October 3, 2016, HEP closed on a common unit purchase agreement in which certain purchasers agreed to purchase in a private placement 3,420,000 HEP common units, representing limited partnership interests, at a price of $30.18 per common unit. HEP received proceeds of approximately $103.0 million, which were used to finance a portion of the Woods Cross assets acquisition. In connection with this private placement and to maintain our then economic 2% general partner interest in HEP, we made capital contributions totaling $2.1 million to HEP in October 2016.

HEP Common Unit Continuous Offering Program
On May 10, 2016, HEP established a continuous offering program under which HEP may issue and sell common units from time to time, representing limited partner interests, up to an aggregate gross sales amount of $200 million. During the year ended December 31, 2017, HEP issued 1,538,452 common units under this program, providing $52.1 million in net proceeds. In connection with this program and to maintain our then economic 2% general partner interest in HEP, we made capital contributions totaling $1.1 million during the year ended December 31, 2017. As of December 31, 2017, HEP has issued 2,241,907 common units with an aggregate gross sales amount of $77.1 million.

HEP intends to use the net proceeds for general partnership purposes, which may include funding working capital, repayment of debt, acquisitions and capital expenditures. Amounts repaid under HEP’s credit facility may be reborrowed from time to time.

As a result of these transactions and resulting HEP ownership changes, we adjusted additional capital and equity attributable to HEP's noncontrolling interest holders to reallocate HEP's equity among its unitholders.

NOTE 4: Fair Value Measurements

Our financial instruments measured at fair value on a recurring basis consist of investments in marketable securities, derivative instruments and RINs credit obligations.

Fair value measurements are derived using inputs (assumptions that market participants would use in pricing an asset or liability, including assumptions about risk). GAAP categorizes inputs used in fair value measurements into three broad levels as follows:

- (Level 1) Quoted prices in active markets for identical assets or liabilities.
- (Level 2) Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, similar assets and liabilities in markets that are not active or can be corroborated by observable market data.
- (Level 3) Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes valuation techniques that involve significant unobservable inputs.

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The carrying amounts of marketable securities, derivative instruments and RINs credit obligations at December 31, 2017 and December 31, 2016 were as follows:

| Financial Instrument | Carrying Amount | Fair Value by Input Level Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| | (In thousands) | | | |
| December 31, 2017 | | | | |
| Assets: | | | | |
| Commodity forward contracts | $3,840 | $— | $3,840 | $ — |
| Total assets | $3,840 | $— | $3,840 | $ — |
| Liabilities: | | | | |
| NYMEX futures contracts | $3,360 | $3,360 | $— | $ — |
| Commodity price swaps | 2,424 | — | 2,424 | — |
| Commodity forward contracts | 1,020 | — | 1,020 | — |
| RINs credit obligations (1) | 8,931 | — | 8,931 | — |
| Total liabilities | $15,735 | $3,360 | $12,375 | $ — |

| Financial Instrument | Carrying Amount | Fair Value by Input Level Level 1 | Level 2 | Level 3 |
|---|---|---|---|---|
| | (In thousands) | | | |
| December 31, 2016 | | | | |
| Assets: | | | | |
| Marketable securities | $424,148 | $— | $424,148 | $— |
| Commodity price swaps | 14,563 | — | 14,358 | 205 |
| Commodity forward contracts | 5,905 | — | 5,905 | — |
| HEP interest rate swaps | 91 | — | 91 | — |
| Total assets | $444,707 | $— | $444,502 | $205 |
| Liabilities: | | | | |
| NYMEX futures contracts | $1,975 | $1,975 | $— | $— |
| Commodity price swaps | 26,845 | — | 24,086 | 2,759 |
| Commodity forward contracts | 8,316 | — | 8,316 | — |
| Foreign currency forward contracts | 6,519 | — | 6,519 | — |
| Total liabilities | $43,655 | $1,975 | $38,921 | $2,759 |

(1) Represent obligations for RINs credits for which we do not have sufficient quantities at December 31, 2017 to satisfy our Environmental Protection Agency ("EPA") regulatory blending requirements.

Level 1 Financial Instruments
Our NYMEX futures contracts are exchange traded and are measured and recorded at fair value using quoted market prices, a Level 1 input.

Level 2 Financial Instruments

Investments in marketable securities, derivative instruments consisting of commodity price swaps and forward sales and purchase contracts and HEP's interest rate swaps are measured and recorded at fair value using Level 2 inputs. The fair values of the commodity price and interest rate swap contracts are based on the net present value of expected future cash flows related to both variable and fixed rate legs of the respective swap agreements. The measurements are computed using market-based observable inputs, quoted forward commodity prices with respect to our commodity price swaps and the forward London Interbank Offered Rate ("LIBOR") yield curve with respect to HEP's interest rate swaps. RINs credit obligations are valued based on current market RINs prices. The fair value of the marketable securities is based on values provided by a third party, which were derived using market quotes for similar type instruments, a Level 2 input.

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Level 3 Financial Instruments
We at times have commodity price swap and forward contracts that relate to forecasted sales and purchases of commodities for which quoted forward market prices are not readily available. The forward rate used to value these price swaps and forward sales and purchase contracts are derived using a projected forward rate using quoted market rates for similar products, adjusted for regional pricing and grade differentials, a Level 3 input.

The following table presents the changes in fair value of our Level 3 assets and liabilities (all related to derivative instruments) for the years ended December 31, 2017 and 2016:

| Level 3 Financial Instruments | Years Ended December 31, 2017 | 2016 |
|---|---|---|
| | (In thousands) | |
| Liability balance at beginning of period | $(2,554) | $— |
| Change in fair value: | | |
| Recognized in other comprehensive income | 1,626 | (1,460) |
| Recognized in cost of products sold | (4,664) | (1,094) |
| Settlement date fair value of contractual maturities: | | |
| Recognized in sales and other revenues | (165) | — |
| Recognized in cost of products sold | 5,757 | — |
| Liability balance at end of period | $— | $(2,554) |

NOTE 5: Earnings Per Share

Basic earnings per share is calculated as net income (loss) attributable to HollyFrontier stockholders divided by the average number of shares of common stock outstanding. Diluted earnings per share assumes, when dilutive, the issuance of the net incremental shares from restricted shares and performance share units. The following is a reconciliation of the denominators of the basic and diluted per share computations for net income (loss) attributable to HollyFrontier stockholders:

| | Years Ended December 31, 2017 | 2016 | 2015 |
|---|---|---|---|
| | (In thousands, except per share data) | | |
| Net income (loss) attributable to HollyFrontier stockholders | $805,395 | $(260,453) | $740,101 |
| Participating securities' (restricted stock) share in earnings | 5,047 | 1,003 | 2,306 |
| Net income (loss) attributable to common shares | $800,348 | $(261,456) | $737,795 |
| Average number of shares of common stock outstanding | 176,174 | 176,101 | 188,731 |
| Effect of dilutive variable restricted shares and performance share units (1) | 1,022 | — | 209 |
| Average number of shares of common stock outstanding assuming dilution | 177,196 | 176,101 | 188,940 |
| Basic earnings (loss) per share | $4.54 | $(1.48) | $3.91 |
| Diluted earnings (loss) per share | $4.52 | $(1.48) | $3.90 |
| | | | |
| (1) Excludes anti-dilutive restricted and performance share units of: | 543 | 469 | 89 |

NOTE 6: Stock-Based Compensation

As of December 31, 2017, we have two principal share-based compensation plans (collectively, the "Long-Term Incentive Compensation Plan").

HOLLYFRONTIER CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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The compensation cost charged against income for these plans was $39.8 million, $22.8 million and $26.9 million for the years ended December 31, 2017, 2016 and 2015, respectively. Our accounting policy for the recognition of compensation expense for awards with pro-rata vesting is to expense the costs ratably over the vesting periods.

Additionally, HEP maintains a share-based compensation plan for Holly Logistic Services, L.L.C.'s non-employee directors and certain executives and employees. Compensation cost attributable to HEP’s share-based compensation plan was $2.5 million, $2.7 million and $3.5 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Restricted Stock and Restricted Stock Units
Under our Long-Term Incentive Compensation Plan, we grant certain officers and other key employees restricted stock unit awards with awards generally vesting over a period of two to three years. We previously granted restricted stock to certain officers and key employees with awards vesting over a period of three years. Certain restricted stock unit award recipients have the right to receive dividends, however, restricted stock units do not have any other rights of absolute ownership. Restricted stock award recipients are generally entitled to all the rights of absolute ownership of the restricted shares from the date of grant including the right to vote the shares and to receive dividends. Upon vesting, restrictions on the restricted shares and restricted share units lapse at which time they convert to common shares. In addition, we grant non-employee directors restricted stock unit awards, which typically vest over a period of one year and are payable in stock. The fair value of each restricted stock and restricted stock unit award is measured based on the grant date market price of our common shares and is amortized over the respective vesting period.

A summary of restricted stock and restricted stock unit activity and changes during the year ended December 31, 2017 is presented below:

| Restricted Stock and Restricted Stock Units | Grants | Weighted Average Grant Date Fair Value | Aggregate Intrinsic Value ($000) |
|---|---|---|---|
| Outstanding at January 1, 2017 (non-vested) | 1,188,774 | $ 28.87 | |
| Granted [1] | 1,426,106 | 35.02 | |
| Vesting (transfer/conversion to common stock) | (817,601 ) | 30.41 | |
| Forfeited | (71,091 ) | 30.20 | |
| Outstanding at December 31, 2017 (non-vested) | 1,726,188 | $ 33.51 | $ 88,415 |

(1) Includes restricted stock units issued to employees in the PCLI acquisition.

In connection with our February 1, 2017 PCLI acquisition, we issued 472,276 restricted stock units to PCLI employees as replacement units for unvested awards issued under the legacy PCLI plan. The fair value of these awards totaled $13.3 million and is based on a February 1, 2017 grant date value of $28.12 per unit. Of this total, $6.6 million is recognized as an increase to our PCLI purchase price as it represents the value of the awards attributable to pre-acquisition services, and the remaining $6.7 million is to be recognized as compensation expense over the two-year vesting period.

For the years ended December 31, 2017, 2016 and 2015, restricted stock and restricted stock units vested having a grant date fair value of $24.9 million, $18.4 million and $14.2 million, respectively. For the years ended December 31, 2016 and 2015, we granted restricted stock and restricted stock units having a weighted average grant date fair value of $21.66 and $49.92, respectively. As of December 31, 2017, there was $33.9 million of total unrecognized compensation cost related to non-vested restricted stock and restricted stock unit grants. That cost is expected to be recognized over a weighted-average period of 1.6 years.

Performance Share Units

Under our Long-Term Incentive Compensation Plan, we grant certain officers and other key employees performance share units, which are payable in stock upon meeting certain criteria over the service period, and generally vest over a period of three years. Under the terms of our performance share unit grants, awards are subject to “financial performance” and “market performance” criteria. Financial performance is based on our financial performance compared to a peer group of independent refining companies, while market performance is based on the relative standing of total shareholder return achieved by HollyFrontier compared to peer group companies. The number of shares ultimately issued under these awards can range from zero to 200% of target award amounts. As of December 31, 2017, estimated share payouts for outstanding non-vested performance share unit awards averaged approximately 110% of target amounts.

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A summary of performance share unit activity and changes during the year ended December 31, 2017 is presented below:

| Performance Share Units | Grants |
|---|---|
| Outstanding at January 1, 2017 (non-vested) | 703,939 |
| Granted | 239,964 |
| Vesting and transfer of ownership to recipients | (151,599) |
| Forfeited | (99,643) |
| Outstanding at December 31, 2017 (non-vested) | 692,661 |

For the year ended December 31, 2017, we issued 138,374 shares of common stock, representing a 91% payout on vested performance share units having a grant date fair value of $6.6 million. For the years ended December 31, 2016 and 2015, we issued common stock upon the vesting of the performance share units having a grant date fair value of $7.4 million and $10.4 million, respectively. As of December 31, 2017, there was $15.6 million of total unrecognized compensation cost related to non-vested performance share units having a grant date fair value of $33.94 per unit. That cost is expected to be recognized over a weighted-average period of 2.1 years.

NOTE 7: Cash and Cash Equivalents and Investments in Marketable Securities

Our investment portfolio at December 31, 2017 consisted of cash and cash equivalents.

We periodically invest in marketable debt securities with the maximum maturity or put date of any individual issue generally not greater than one year from the date of purchase, which are usually held until maturity. All of these instruments are classified as available-for-sale and are reported at fair value. Interest income is recorded as earned. Unrealized gains and losses, net of related income taxes, are reported as a component of accumulated other comprehensive income. Upon sale or maturity, realized gains on our marketable debt securities are recognized as interest income. These gains are computed based on the specific identification of the underlying cost of the securities, net of unrealized gains and losses previously reported in other comprehensive income. Unrealized gains and losses on our available-for-sale securities are due to changes in market prices and are considered temporary.

The following is a summary of our marketable securities at December 31, 2016:

| | Amortized Cost | Gross Unrealized Gain | Gross Unrealized Loss | Fair Value (Net Carrying Amount) |
|---|---|---|---|---|
| | (In thousands) | | | |
| December 31, 2016 | | | | |
| Commercial paper | $7,687 | $ 1 | $ (1) | $7,687 |
| Corporate debt securities | 4,001 | — | — | 4,001 |
| State and political subdivisions debt securities | 412,462 | 1 | (3) | 412,460 |
| Total marketable securities | $424,150 | $ 2 | $ (4) | $424,148 |

Interest income recognized on our marketable securities was $0.3 million, $0.8 million and $1.9 million for the years ended December 31, 2017, 2016 and 2015, respectively.

HOLLYFRONTIER CORPORATION
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NOTE 8: Inventories

Inventory consists of the following components:

| | December 31, | |
|---|---|---|
| | 2017 | 2016 |
| | (In thousands) | |
| Crude oil | $581,417 | $549,886 |
| Other raw materials and unfinished products(1) | 396,618 | 287,561 |
| Finished products(2) | 655,336 | 465,432 |
| Lower of cost or market reserve | (223,833) | (332,518) |
| Process chemicals(3) | 24,792 | 2,767 |
| Repairs and maintenance supplies and other (4) | 195,762 | 162,548 |
| Total inventory | $1,630,092 | $1,135,676 |

(1) Other raw materials and unfinished products include feedstocks and blendstocks, other than crude.
(2) Finished products include gasolines, jet fuels, diesels, lubricants, asphalts, LPG's and residual fuels.
(3) Process chemicals include additives and other chemicals.
(4) Includes RINs

We acquired $214.9 million of other raw materials, unfinished and finished products and repair and maintenance supplies in connection with our February 1, 2017 acquisition of PCLI. We value these inventories at the lower of FIFO cost or net realizable value.

Inventories which are valued at the lower of LIFO cost or market reflect a valuation reserve of $223.8 million and $332.5 million at December 31, 2017 and 2016, respectively. The December 31, 2016 market reserve of $332.5 million was reversed due to the sale of inventory quantities that gave rise to the 2016 reserve. A new market reserve of $223.8 million was established as of December 31, 2017 based on market conditions and prices at that time. The effect of the change in the lower of cost or market reserve was a decrease to cost of goods sold of $108.7 million and $291.9 million for the years ended December 31, 2017 and 2016, respectively, and an increase of $227.0 million for the year ended December 31, 2015.

At December 31, 2017, 2016 and 2015, the LIFO value of inventory, net of the lower of cost or market reserve, was equal to current costs.

In May 2017, the EPA granted the Cheyenne Refinery a one-year small refinery exemption from the Renewable Fuel Standard ("RFS") program requirements for the 2016 calendar year. As a result, the Cheyenne Refinery's gasoline and diesel production are not subject to the percentage of production that must satisfy a Renewable Volume Obligation ("RVO") for 2016. In September 2017, the EPA reinstated the RINs previously submitted to meet our Cheyenne Refinery's 2016 RVO. The cost of the RINs used earlier to satisfy the Cheyenne Refinery's 2016 RVO of $30.5 million was charged to cost of products sold in 2016. In the second quarter of 2017, we increased our inventory of RINs and reduced our cost of products sold by this amount, representing the cost of the RINs that were reinstated as a result of the RFS exemption received by the Cheyenne Refinery.

Additionally, in December 2017, the EPA granted the Woods Cross Refinery a one-year small refinery exemption from the RFS program requirements for the 2016 calendar year. In the fourth quarter of 2017, we increased our inventory of RINs and reduced our cost of products sold in the amount of $27.3 million, representing the cost of the RINs to be reinstated as a result of the RFS exemption received by the Woods Cross Refinery. These RINs were reinstated in January 2018.

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NOTE 9: Properties, Plants and Equipment

The components of properties, plants and equipment are as follows:

| | December 31, 2017 | 2016 |
|---|---|---|
| | (In thousands) | |
| Land, buildings and improvements | $442,214 | $326,097 |
| Refining facilities | 3,904,161 | 3,382,369 |
| Pipelines and terminals | 1,484,502 | 1,392,898 |
| Transportation vehicles | 20,394 | 18,841 |
| Other fixed assets | 467,469 | 153,463 |
| Construction in progress | 205,049 | 273,188 |
| | 6,523,789 | 5,546,856 |
| Accumulated depreciation | (1,810,515) | (1,538,408) |
| | $4,713,274 | $4,008,448 |

During the year ended December 31, 2016, we recorded impairment charges of $309.3 million that are attributable to properties, plant and equipment of our Cheyenne reporting unit. See Note 10 for additional information.

We capitalized interest attributable to construction projects of $5.0 million, $8.0 million and $5.5 million for the years ended December 31, 2017, 2016 and 2015, respectively.

Depreciation expense was $286.5 million, $247.9 million and $233.3 million for the years ended December 31, 2017, 2016 and 2015, respectively.

NOTE 10: Goodwill and Long-lived Asset Impairment

As of December 31, 2017, our goodwill balance was $2.2 billion. During 2017, we recognized $194.8 million in goodwill as a result of our PCLI acquisition. Also during 2017, HEP recognized $21.6 million in goodwill as a result of the acquisition of HEP's remaining interests in SLC Pipeline and Frontier Pipeline. See Note 20 for additional information on our segments. The carrying amount of our goodwill may fluctuate from period to period due to the effects of foreign currency translation adjustments on goodwill assigned to our Lubricants and Specialty Products segment.

The following is a summary of our goodwill by segment:

| | Refining | Lubricants and Specialty Products | HEP | Total |
|---|---|---|---|---|
| | (In thousands) | | | |
| Balance at December 31, 2016 | | | | |
| Goodwill | $2,042,790 | $— | $288,991 | $2,331,781 |
| Accumulated impairment losses | (309,318) | — | — | (309,318) |
| | 1,733,472 | — | 288,991 | 2,022,463 |

| | | | | |
|---|---|---|---|---|
| Additional goodwill acquired | — | 194,760 | 21,619 | 216,379 |
| Foreign currency translation adjustment | — | 5,902 | — | 5,902 |
| | | | | |
| Balance at December 31, 2017 | | | | |
| Goodwill | 2,042,790 | 200,662 | 310,610 | 2,554,062 |
| Accumulated impairment losses | (309,318 ) | — | — | (309,318 ) |
| | $1,733,472 | $200,662 | $310,610 | $2,244,744 |

We performed our annual goodwill impairment testing as of July 1, 2017 and determined the fair value of our El Dorado reporting unit exceeded its carrying value by approximately 10%. A reasonable expectation exists that future deterioration in gross margins could result in an impairment of goodwill and the long-lived assets of the El Dorado reporting unit as some point in the future and such impairment charges could be material. Additionally, qualitative testing indicated no impairment of goodwill attributable to our other reporting units.

During the second quarter of 2017, we incurred long-lived asset impairment charges totaling $23.2 million, including $19.2 million of construction-in-progress consisting primarily of engineering work for a planned expansion of our Woods Cross refinery to add lubricants production capabilities. During the second quarter of 2017, we concluded to no longer pursue this expansion for various reasons including our recent acquisition of PCLI. The remaining $4.0 million in charges relate to property, plant and equipment that we expensed in the form of accelerated depreciation in the income statement. Additionally, as a result of our impairment testing in the second quarter of 2016, we determined that the carrying value of the long-lived assets of the Cheyenne Refinery had been impaired and recorded long-lived asset impairment charges of $344.8 million that principally related to properties, plant and equipment.

During the second quarter of 2016, we performed interim goodwill impairment and related long-lived asset impairment testing of our El Dorado and Cheyenne Refinery reporting units after identifying a combination of events and circumstances that are indicators of potential goodwill and long-lived asset impairment. The indicators included lower than typical gross margins during the summer driving season, a decrease in the gross margin outlook and decrease in our market capitalization due to a decline in our common share price. Our testing first assessed the carrying values of our refining long-lived asset groups for recoverability. This entailed a comparison of our reporting unit fair values relative to their respective carrying values. If carrying value exceeds fair value for a reporting unit, we measure goodwill impairment as the excess of the carrying amount of reporting unit goodwill over the implied fair value of that goodwill based on estimates of the fair value of all assets and liabilities in the reporting unit. The estimated fair values of our goodwill reporting units and long-lived asset groups were derived using a combination of both income and market approaches. The income approach reflects expected future cash flows based on estimates of future crack spreads, forecasted production levels, operating costs and capital expenditures. Our market approaches include both the guideline public company and guideline transaction methods. Both methods utilize pricing multiples derived from historical market transactions of other like-kind assets. These fair value measurements involve significant unobservable inputs (Level 3 inputs). As a result of our impairment testing during the second quarter of 2016, we determined that the carrying value of the Cheyenne Refinery's goodwill was fully impaired and a goodwill impairment charge of $309.3 million was recorded, representing all of the goodwill allocated to our Cheyenne Refinery. Our interim testing in 2016 did not identify any impairment related to our El Dorado reporting unit.

There were no impairments of goodwill or long-lived assets during the year ended December 31, 2015.

## NOTE 11: Environmental

We expensed $13.1 million, $6.6 million and $14.7 million for the years ended December 31, 2017, 2016 and 2015, respectively, for environmental remediation obligations. The accrued environmental liability reflected in our consolidated balance sheets was $103.7 million and $96.4 million at December 31, 2017 and 2016, respectively, of which $89.6 million and $82.9 million, respectively, were classified as other long-term liabilities. These accruals include remediation and monitoring costs expected to be incurred over an extended period of time (up to 30 years for certain projects). The amount of our accrued liability includes $2.9 million of environmental obligations assumed in connection with our February 1, 2017 PCLI acquisition. Estimated liabilities could increase in the future when the results of ongoing investigations become known, are considered probable and can be reasonably estimated.

## NOTE 12: Debt

### HollyFrontier Credit Agreement

We have a $1.35 billion senior unsecured revolving credit facility maturing in February 2022 (the “HollyFrontier Credit Agreement”). The HollyFrontier Credit Agreement may be used for revolving credit loans and letters of credit from time to time and is available to fund general corporate purposes. During the year ended December 31, 2017, we received advances totaling $26.0 million and repaid $26.0 million under the HollyFrontier Credit Agreement. At December 31, 2017, we were in compliance with all covenants, had no outstanding borrowings and had outstanding letters of credit totaling $2.8 million under the HollyFrontier Credit Agreement.

Indebtedness under the HollyFrontier Credit Agreement bears interest, at our option at either a) an alternate base rate (as defined in the credit agreement) plus an applicable margin of (ranging from 0.125% - 1.000%), b) LIBOR plus an applicable margin (ranging from 1.125% to 2.000%), or c) Canadian Dealer Offered Rate plus an applicable margin (ranging from 1.125% to 2.000%) for Canadian dollar denominated borrowings.

### HEP Credit Agreement

HEP has a $1.4 billion senior secured revolving credit facility maturing in July 2022 (the “HEP Credit Agreement”) and is available to fund capital expenditures, investments, acquisitions, distribution payments, working capital and for general partnership purposes. It is also available to fund letters of credit up to a $50 million sub-limit and has a $300 million accordion. During the year ended December 31, 2017, HEP received advances totaling $969.0 million and repaid $510.0 million under the HEP Credit Agreement. At December 31, 2017, HEP was in compliance with all of its covenants, had outstanding borrowings of $1,012.0 million and no outstanding letters of credit under the HEP Credit Agreement.

Indebtedness under the HEP Credit Agreement bears interest, at HEP's option, at either a reference rate announced by the administrative agent plus an applicable margin or at a rate equal to LIBOR plus an applicable margin. In each case, the applicable margin is based upon the ratio of HEP’s funded debt to earnings before interest, taxes, depreciation and amortization (as defined in the HEP Credit Agreement). The weighted average interest rates in effect on HEP’s Credit Agreement borrowings were 3.73% and 2.98% at December 31, 2017 and 2016, respectively.

HEP’s obligations under the HEP Credit Agreement are collateralized by substantially all of HEP’s assets and are guaranteed by HEP's material wholly-owned subsidiaries. Any recourse to the general partner would be limited to the extent of HEP Logistics Holdings, L.P.’s assets, which other than its investment in HEP, are not significant. HEP’s creditors have no recourse to our other assets. Furthermore, our creditors have no recourse to the assets of HEP and its consolidated subsidiaries.

### HollyFrontier Senior Notes

In March 2016 and November 2016, we issued $250 million and $750 million, respectively, in aggregate principal amount of 5.875% senior notes (the “HollyFrontier Senior Notes”) maturing April 2026. The HollyFrontier Senior Notes are unsecured and unsubordinated obligations of ours and rank equally with all our other existing and future unsecured and unsubordinated indebtedness.

In June 2015, we redeemed our $150.0 million aggregate principal amount of 6.875% senior notes maturing November 2018 at a redemption cost of $155.2 million at which time we recognized a $1.4 million early extinguishment loss consisting of a $5.2 million debt redemption premium, net of an unamortized premium of $3.8 million.

HollyFrontier Financing Obligation

In March 2016, we extinguished a financing obligation at a cost of $39.5 million and recognized an $8.7 million loss on the early termination. The financing obligation related to a sale and lease-back of certain crude oil tankage that we sold to an affiliate of Plains in October 2009 for $40.0 million.

HollyFrontier Term Loan

In April 2016, we entered into a $350 million senior unsecured term loan (the “HollyFrontier Term Loan”) maturing in April 2019. The HollyFrontier Term Loan was fully repaid with proceeds received upon the November 2016 issuance of the HollyFrontier Senior Notes.

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HEP Senior Notes
In July 2016 and September 2017, HEP issued $400 million and $100 million, respectively, in aggregate principal amount of 6.0% HEP senior notes in a private placement. HEP used the net proceeds to repay indebtedness under the HEP Credit Agreement.

HEP's 6.0% senior notes ($500 million aggregate principal amount maturing August 2024) (the “HEP Senior Notes”) are unsecured and impose certain restrictive covenants, including limitations on HEP’s ability to incur additional indebtedness, make investments, sell assets, incur certain liens, pay distributions, enter into transactions with affiliates, and enter into mergers. At any time when the HEP Senior Notes are rated investment grade by both Moody’s and Standard & Poor’s and no default or event of default exists, HEP will not be subject to many of the foregoing covenants. Additionally, HEP has certain redemption rights under the HEP Senior Notes.

In January 2017, HEP redeemed its $300 million aggregate principal amount of 6.5% senior notes maturing March 2020 at a redemption cost of $309.8 million, at which time HEP recognized a $12.2 million early extinguishment loss consisting of a $9.8 million debt redemption premium and unamortized discount and financing costs of $2.4 million. HEP funded the redemption with borrowings under the HEP Credit Agreement.

Indebtedness under the HEP Senior Notes is guaranteed by HEP’s wholly-owned subsidiaries. HEP’s creditors have no recourse to our assets. Furthermore, our creditors have no recourse to the assets of HEP and its consolidated subsidiaries.

The carrying amounts of long-term debt are as follows:

| | December 31, | |
| --- | --- | --- |
| | 2017 | 2016 |
| | (In thousands) | |
| HollyFrontier 5.875% Senior Notes | | |
| Principal | $1,000,000 | $1,000,000 |
| Unamortized discount and debt issuance costs | (8,315) | (8,775) |
| | 991,685 | 991,225 |
| HEP Credit Agreement | 1,012,000 | 553,000 |
| HEP 6% Senior Notes | | |
| Principal | 500,000 | 400,000 |
| Unamortized discount and debt issuance costs | (4,692) | (6,607) |
| | 495,308 | 393,393 |
| HEP 6.5% Senior Notes | | |
| Principal | — | 300,000 |
| Unamortized discount and debt issuance costs | — | (2,481) |
| | — | 297,519 |
| Total HEP long-term debt | 1,507,308 | 1,243,912 |
| Total long-term debt | $2,498,993 | $2,235,137 |

The fair values of the senior notes are as follows:

| | December 31, | |
|---|---|---|
| | 2017 | 2016 |
| | (In thousands) | |
| HollyFrontier senior notes | $1,113,470 | $1,022,500 |
| HEP senior notes | $525,120 | $723,750 |

These fair values are based on estimates provided by a third party using market quotes for similar type instruments, a Level 2 input. See Note 4 for additional information on Level 2 inputs.

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Principal maturities of long-term debt are as follows:

| Years Ending December 31, | (In thousands) |
|---|---|
| 2018 | $— |
| 2019 | — |
| 2020 | — |
| 2021 | — |
| 2022 | 1,012,000 |
| Thereafter | 1,500,000 |
| Total | $2,512,000 |

NOTE 13: Derivative Instruments and Hedging Activities

Commodity Price Risk Management
Our primary market risk is commodity price risk. We are exposed to market risks related to the volatility in crude oil and refined products, as well as volatility in the price of natural gas used in our refining operations. We periodically enter into derivative contracts in the form of commodity price swaps, forward purchase and sales and futures contracts to mitigate price exposure with respect to:

- our inventory positions;
- natural gas purchases;
- costs of crude oil and related grade differentials;
- prices of refined products; and
- our refining margins.

Accounting Hedges
We have swap contracts serving as cash flow hedges against price risk on forecasted purchases of natural gas. We also periodically have forward sales contracts that lock in the prices of future sales of crude oil and refined product and swap contracts serving as cash flow hedges against price risk on forecasted purchases of WTI crude oil and forecasted sales of refined product. These contracts have been designated as accounting hedges and are measured at fair value with offsetting adjustments (gains/losses) recorded directly to other comprehensive income. These fair value adjustments are later reclassified to earnings as the hedging instruments mature. On a quarterly basis, hedge ineffectiveness is measured by comparing the change in fair value of the swap contracts against the expected future cash inflows/outflows on the respective transaction being hedged. Any hedge ineffectiveness is also recognized in earnings.

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The following table presents the pre-tax effect on other comprehensive income ("OCI") and earnings due to fair value adjustments and maturities of commodity price swaps and forward sales under hedge accounting:

| | Unrealized Gain (Loss) Recognized in OCI | Gain (Loss) Recognized in Earnings Due to Settlements | | Gain (Loss) Attributable to Hedge Ineffectiveness Recognized in Earnings | |
|---|---|---|---|---|---|
| | | Location | Amount | Location | Amount |
| | | (In thousands) | | | |
| Year Ended December 31, 2017 | | | | | |
| Commodity price swaps | | | | | |
| Change in fair value | $ 2,831 | Sales and other revenues | $7,836 | | |
| Loss reclassified to earnings due to settlements | 10,627 | Cost of products sold | (299) | | |
| Amortization of discontinued hedges reclassified to earnings | 1,080 | Operating expenses | (19,244) | Operating expenses | $(54) |
| Total | $ 14,538 | | $(11,707) | | $(54) |
| Year Ended December 31, 2016 | | | | | |
| Commodity price swaps | | | | | |
| Change in fair value | $ (17,018) | | | | |
| Loss reclassified to earnings due to settlements | 41,077 | Sales and other revenues | $(20,293) | | |
| Amortization of discontinued hedges reclassified to earnings | 1,080 | Operating expenses | (21,864) | Operating expenses | $— |
| Total | $ 25,139 | | $(42,157) | | $— |
| Year Ended December 31, 2015 | | | | | |
| Commodity price swaps | | | | | |
| Change in fair value | $ (3,983) | Sales and other revenues | $245,819 | Sales and other revenues | $(274) |
| Gain reclassified to earnings due to settlements | (49,592) | Cost of products sold | (179,700) | Cost of products sold | 4,376 |
| Amortization of discontinued hedges reclassified to earnings | 1,080 | Operating expenses | (17,607) | Operating expenses | 547 |
| Total | $ (52,495) | | $48,512 | | $4,649 |

As of December 31, 2017, we have the following notional contract volumes related to outstanding derivative instruments serving as cash flow hedges against price risk on forecasted transactions:

| Derivative Instrument | Total Outstanding Notional | Notional Contract Volumes by Year of Maturity | | | | Unit of Measure |
|---|---|---|---|---|---|---|
| | | 2018 | 2019 | 2020 | 2021 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Natural gas price swaps - long | 7,200,000 | 1,800,000 | 1,800,000 | 1,800,000 | 1,800,000 | MMBTU |
| Forward gasoline and diesel contracts - short | 250,000 | 250,000 | — | — | — | Barrels |
| Forward crude oil contracts - short | 276,751 | 276,751 | — | — | — | Barrels |

Economic Hedges
We also have commodity forward contracts and NYMEX futures contracts to lock in prices on forecasted purchases of inventory. In addition, we periodically have swap contracts that serve as economic hedges (derivatives used for risk management, but not designated as accounting hedges) to lock in basis spread differentials on forecasted purchases of crude oil and natural gas. Furthermore, we had Canadian currency swap contracts that effectively fixed the conversion rate on $1.125 billion Canadian dollars (the PCLI purchase price), which were settled on February 1, 2017, in connection with the closing of the PCLI acquisition. These contracts are measured at fair value with offsetting adjustments (gains/losses) recorded directly to income.

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The following table presents the pre-tax effect on income due to maturities and fair value adjustments of our economic hedges:

| | Years Ended December 31, | | |
|---|---|---|---|
| Location of Gain (Loss) Recognized in Earnings | 2017 | 2016 | 2015 |
| | (In thousands) | | |
| Cost of products sold | $(12,327) | $(6,889) | $48,082 |
| Operating expenses | (6,697) | 7,276 | (12,003) |
| Gain (loss) on foreign currency swap | 24,545 | (6,520) | — |
| Total | $5,521 | $(6,133) | $36,079 |

As of December 31, 2017, we have the following notional contract volumes related to our outstanding derivative contracts serving as economic hedges (all maturing in 2018):

| Derivative Instrument | Total Outstanding Notional | Unit of Measure |
|---|---|---|
| NYMEX futures (WTI) - short | 1,175,000 | Barrels |
| Forward gasoline and diesel contracts - long | 85,000 | Barrels |

Interest Rate Risk Management
HEP used interest rate swaps to manage its exposure to interest rate risk. These swap contracts, which matured in July 2017, had been designated as cash flow hedges.

The following table presents the pre-tax effect on other comprehensive income and earnings due to fair value adjustments and maturities of HEP's interest rate swaps under hedge accounting:

| | Unrealized Gain (Loss) Recognized in OCI | Income (Loss) Recognized in Earnings Due to Settlements | |
|---|---|---|---|
| | | Location | Amount |
| | (In thousands) | | |
| Year Ended December 31, 2017 | | | |
| Interest rate swaps | | | |
| Change in fair value | $88 | | |
| Gain reclassified to earnings due to settlements | (179) | Interest expense | $179 |
| Total | $(91) | | $179 |
| | | | |
| Year Ended December 31, 2016 | | | |
| Interest rate swaps | | | |
| Change in fair value | $(607) | | |
| Loss reclassified to earnings due to settlements | 508 | Interest expense | $(508) |
| Total | $(99) | | $(508) |
| | | | |
| Year Ended December 31, 2015 | | | |
| Interest rate swaps | | | |

| | | | |
|---|---|---|---|
| Change in fair value | $(1,864) | | |
| Loss reclassified to earnings due to settlements | 2,100 | Interest expense | $(2,100) |
| Total | $236 | | $(2,100) |

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The following table presents the fair value and balance sheet locations of our outstanding derivative instruments. These amounts are presented on a gross basis with offsetting balances that reconcile to a net asset or liability position in our consolidated balance sheets. We present on a net basis to reflect the net settlement of these positions in accordance with provisions of our master netting arrangements.

| | Derivatives in Net Asset Position | | | Derivatives in Net Liability Position | | |
|---|---|---|---|---|---|---|
| | Gross Assets | Gross Liabilities Offset in Balance Sheet | Net Assets Recognized in Balance Sheet | Gross Liabilities | Gross Assets Offset in Balance Sheet | Net Liabilities Recognized in Balance Sheet |
| | (In thousands) | | | | | |
| December 31, 2017 | | | | | | |
| Derivatives designated as cash flow hedging instruments: | | | | | | |
| Commodity price swap contracts | $— | $— | $ — | $2,424 | $ — | $ 2,424 |
| Commodity forward contracts | 3,067 | — | 3,067 | 418 | — | 418 |
| | $3,067 | $— | $ 3,067 | $2,842 | $ — | $ 2,842 |
| Derivatives not designated as cash flow hedging instruments: | | | | | | |
| NYMEX futures contracts | $— | $— | $ — | $3,360 | $ — | $ 3,360 |
| Commodity forward contracts | 773 | — | 773 | 602 | — | 602 |
| | $773 | $— | $ 773 | $3,962 | $ — | $ 3,962 |
| Total net balance | | | $ 3,840 | | | $ 6,804 |
| Balance sheet classification: | | | | Accrued liabilities | | $ 5,365 |
| | | | | Other long-term liabilities | | 1,439 |
| | Prepayment and other | | $ 3,840 | | | $ 6,804 |

| | Derivatives in Net Asset Position | | | Derivatives in Net Liability Position | | |
|---|---|---|---|---|---|---|
| | Gross Assets | Gross Liabilities Offset in Balance Sheet | Net Assets Recognized in Balance Sheet | Gross Liabilities | Gross Assets Offset in Balance Sheet | Net Liabilities Recognized in Balance Sheet |
| | (In thousands) | | | | | |
| December 31, 2016 | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Derivatives designated as cash flow hedging instruments: | | | | | | | |
| Commodity price swap contracts | $— | $— | $ — | | $13,185 | $(431 ) | $ 12,754 |
| Commodity forward contracts | — | — | — | | 2,978 | — | 2,978 |
| Interest rate swap contracts | 91 | — | 91 | | — | — | — |
| | $91 | $— | $ 91 | | $16,163 | $(431 ) | $ 15,732 |
| Derivatives not designated as cash flow hedging instruments: | | | | | | | |
| Commodity price swap contracts | $4,244 | $(756) | $ 3,488 | | $12,903 | $(9,887) | $ 3,016 |
| NYMEX futures contracts | — | — | — | | 1,975 | — | 1,975 |
| Commodity forward contracts | 5,905 | — | 5,905 | | 5,338 | — | 5,338 |
| Foreign currency forward contracts | — | — | — | | 6,519 | — | 6,519 |
| | $10,149 | $(756) | $ 9,393 | | $26,735 | $(9,887) | $ 16,848 |
| Total net balance | | | $ 9,484 | | | | $ 32,580 |
| Balance sheet classification: | Prepayment and other | | $ 9,484 | | Accrued liabilities | | $ 32,580 |

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At December 31, 2017, we had a pre-tax net unrealized loss of $1.3 million classified in accumulated other comprehensive income that relates to all accounting hedges having contractual maturities through 2021. Assuming commodity prices remain unchanged, an unrealized gain of $0.1 million will be effectively transferred from accumulated other comprehensive income into the statement of income as the hedging instruments contractually mature over the next twelve-month period.

NOTE 14: Income Taxes

The Tax Cuts and Jobs Act (the “Act”) was enacted on December 22, 2017. The Act reduces the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously deferred and creates new taxes on certain foreign sourced earnings. At December 31, 2017, we have not completed our accounting for the tax effects of enactment of the Act; however, in certain cases, as described below, we have made a reasonable estimate of the effects on our existing deferred tax balances, the one-time transition tax and related matters. For the items for which a reasonable estimate has been made, we recognized a provisional tax benefit amount of $307.1 million, which is included as a component of the income tax provision in 2017.

Provisional Amounts

Deferred Tax Assets and Liabilities:  We remeasured certain deferred tax assets and liabilities based upon the rates at which they are expected to reverse in the future, which is generally 25%. However, we are still analyzing certain aspects of the Act and refining our calculations, which could potentially affect the measurement of these balances or potentially give rise to new deferred tax amounts. The provisional amount recorded that related to remeasurement of our deferred tax balance was a tax benefit of $315.0 million. Included within our net deferred liability are deferred state income tax balances, which are recorded net of federal tax expense. While many states have not publicly commented on the changes in the Act, we have estimated the value of our state deferred tax balances based upon existing law and related guidance.

Foreign Tax Effects:  The one-time transition tax is based on our foreign subsidiaries’ earnings and profits (“E&P”) arising primarily from our acquisition of PCLI in 2017. This E&P was previously deferred from U.S. income taxes at 35% plus the effect of U.S. state income tax, or together generally 38%. We previously provided deferred U.S. taxes for the repatriation of these deferred amounts. At December 31, 2017, we recorded a provisional amount for our one-time transition tax liability of $6.5 million for our foreign subsidiaries at 15.5% plus the effect of state income tax, or together generally 20%. We have not yet completed our calculation of the total foreign E&P for these foreign subsidiaries. This amount may change when we finalize the calculation of foreign E&P previously deferred from U.S. federal taxation. Additional income taxes have been provided for the remaining outside basis difference inherent in these entities at 21% plus the effect of U.S. state income tax, or together generally 25% as these amounts are not considered to be indefinitely reinvested in foreign operations for which we have provided deferred taxes of $1.4 million.

Our accounting for these provisional amounts related to foreign tax effects is incomplete pending the completion of our analysis of E&P, the related US foreign tax credits and outside basis differences.

The provision for income taxes is comprised of the following:

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| | (In thousands) | | |
| Current | | | |
| Federal | $102,786 | $(71,878) | $480,446 |
| State | 2,760 | (7,304) | 71,750 |
| Foreign | 19,597 | — | — |
| Deferred | | | |
| Federal | (156,767) | 100,208 | (127,714) |
| State | 28,527 | (1,615) | (18,422) |
| Foreign | (9,282) | — | — |
| | $(12,379) | $19,411 | $406,060 |

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The statutory federal income tax rate applied to pre-tax book income reconciles to income tax expense (benefit) as follows:

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| | (In thousands) | | |
| Tax computed at statutory rate | $304,102 | $(60,037) | $422,999 |
| Effect of the Act | (307,101) | — | — |
| State income taxes, net of federal tax benefit | 21,343 | (14,056) | 40,385 |
| Domestic production activities deduction | (9,937) | 4,170 | (35,200) |
| Noncontrolling interest in net income | (29,357) | (26,903) | (24,155) |
| Goodwill | — | 119,722 | — |
| Other | 8,571 | (3,485) | 2,031 |
| | $(12,379) | $19,411 | $406,060 |

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Our deferred income tax assets and liabilities as of December 31, 2017 and 2016 are as follows:

| | December 31, 2017 | | |
|---|---|---|---|
| | Assets | Liabilities | Total |
| | (In thousands) | | |
| Deferred income taxes | | | |
| Properties, plants and equipment (due primarily to tax in excess of book depreciation) | $— | $(560,957) | $(560,957) |
| Accrued employee benefits | 14,685 | — | 14,685 |
| Accrued post-retirement benefits | 10,358 | — | 10,358 |
| Accrued environmental costs | 28,657 | — | 28,657 |
| Hedging instruments | 16 | — | 16 |
| Inventory differences | — | (35,501) | (35,501) |
| Deferred turnaround costs | — | (58,645) | (58,645) |
| Net operating loss and tax credit carryforwards | 21,682 | — | 21,682 |
| Investment in HEP | — | (62,321) | (62,321) |
| Other | — | (5,759) | (5,759) |
| Total | $75,398 | $(723,183) | $(647,785) |

| | December 31, 2016 | | |
|---|---|---|---|
| | Assets | Liabilities | Total |
| | (In thousands) | | |
| Deferred income taxes | | | |
| Properties, plants and equipment (due primarily to tax in excess of book depreciation) | $— | $(618,053) | $(618,053) |
| Accrued employee benefits | 21,355 | — | 21,355 |
| Accrued post-retirement benefits | 10,024 | — | 10,024 |
| Accrued environmental costs | 41,152 | — | 41,152 |
| Hedging instruments | 7,396 | — | 7,396 |

| | | | |
|---|---|---|---|
| Inventory differences | — | (8,341) | (8,341) |
| Deferred turnaround costs | — | (83,993) | (83,993) |
| Net operating loss and tax credit carryforwards | 23,203 | — | 23,203 |
| Investment in HEP | — | (27,276) | (27,276) |
| Other | 14,119 | — | 14,119 |
| Total | $117,249 | $(737,663) | $(620,414) |

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We have Oklahoma income tax credits of $9.7 million that can be carried forward indefinitely, and Kansas income tax credits of $16.8 million that can be carried forward for 16 tax years.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| | | (In thousands) | |
| Balance at January 1 | $22,137 | $ — | $ — |
| Additions based on tax positions related to the current year | 31,615 | 22,137 | — |
| Balance at December 31 | $53,752 | $ 22,137 | $ — |

At December 31, 2017 and 2016, there were $53.8 million and $22.1 million, respectively, of unrecognized tax benefits that, if recognized, would affect our effective tax rate. We had no unrecognized benefits at December 31, 2015. Unrecognized tax benefits are adjusted in the period in which new information about a tax position becomes available or the final outcome differs from the amount recorded.

The 2016 and 2017 additions to unrecognized tax benefits relates to claims filed with the IRS on the federal income tax treatment of refundable biodiesel/ethanol blending tax credits for certain prior years. The issues related to the claims are complex and uncertain, and we cannot conclude that it is more likely than not that we will sustain the claims. Therefore, no tax benefit has been recognized for the filed claims. We believe it is reasonably possible that the total amounts of unrecognized tax benefits will significantly increase within 12 months of the reporting date based on additional filings.

We recognize interest and penalties relating to liabilities for unrecognized tax benefits as an element of tax expense. We have not recorded any penalties related to our uncertain tax positions as we believe that it is more likely than not that there will not be any assessment of penalties.

We are subject to U.S. and Canadian federal income tax, Oklahoma, Kansas, New Mexico, Iowa, Arizona, Utah, Colorado and Nebraska income tax and to income tax of multiple other state jurisdictions. We have substantially concluded all state and local income tax matters for tax years through 2012. Other than the federal claim noted above, we have materially concluded all U.S. federal income tax matters for tax years through December 31, 2013.

NOTE 15: Stockholders' Equity

Shares of our common stock outstanding and activity for the years ended December 31, 2017, 2016 and 2015 are presented below:

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| Common shares outstanding at January 1 | 177,345,266 | 180,234,388 | 196,086,090 |
| | 55,626 | 870,378 | 447,534 |

| | | | |
|---|---|---|---|
| Issuance of restricted stock, excluding restricted stock with performance feature | | | |
| Vesting of performance units | 138,374 | 76,404 | 136,896 |
| Vesting of restricted stock with performance feature | 350,063 | 40,294 | 43,774 |
| Forfeitures of restricted stock | (139,634) | (16,795) | (51,332) |
| Purchase of treasury stock [1] | (342,073) | (3,859,403) | (16,428,574) |
| Common shares outstanding at December 31 | 177,407,622 | 177,345,266 | 180,234,388 |

(1) Includes 342,073, 147,922 and 151,967 shares, respectively, withheld under the terms of stock-based compensation agreements to provide funds for the payment of payroll and income taxes due at the vesting of share-based awards, as well as other stock repurchases under separate authority from our Board of Directors.

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In May 2015, our Board of Directors approved a $1 billion share repurchase program, which replaced all existing share repurchase programs, authorizing us to repurchase common stock in the open market or through privately negotiated transactions. The timing and amount of stock repurchases will depend on market conditions and corporate, regulatory and other relevant considerations. This program may be discontinued at any time by the Board of Directors. As of December 31, 2017, we had remaining authorization to repurchase up to $178.8 million under this stock repurchase program. In addition, we are authorized by our Board of Directors to repurchase shares in an amount sufficient to offset shares issued under our compensation programs.

During the years ended December 31, 2017, 2016 and 2015, we withheld shares of our common stock from certain employees in the amounts of $15.9 million, $4.7 million and $6.2 million, respectively. These withholdings were made under the terms of restricted stock and performance share unit agreements upon vesting, at which time, we concurrently made cash payments to fund payroll and income taxes on behalf of officers and employees who elected to have shares withheld from vested amounts to pay such taxes.

NOTE 16: Other Comprehensive Income (Loss)

The components and allocated tax effects of other comprehensive income are as follows:

| | Before-Tax | Tax Expense (Benefit) | After-Tax |
|---|---|---|---|
| | (In thousands) | | |
| Year Ended December 31, 2017 | | | |
| Net change in foreign currency translation adjustment | $22,151 | $7,774 | $14,377 |
| Net unrealized loss on marketable securities | (4) | (1) | (3) |
| Net unrealized gain on hedging instruments | 14,447 | 5,613 | 8,834 |
| Net change in pension and other post-retirement benefit obligations | (5,807) | (2,037) | (3,770) |
| Other comprehensive income | 30,787 | 11,349 | 19,438 |
| Less other comprehensive loss attributable to noncontrolling interest | (57) | — | (57) |
| Other comprehensive gain attributable to HollyFrontier stockholders | $30,844 | $11,349 | $19,495 |
| | | | |
| Year Ended December 31, 2016 | | | |
| Net unrealized gain on marketable securities | $104 | $40 | $64 |
| Net unrealized gain on hedging instruments | 25,040 | 9,713 | 15,327 |
| Net change in other post-retirement benefit obligations | (1,113) | (431) | (682) |
| Other comprehensive income | 24,031 | 9,322 | 14,709 |
| Less other comprehensive loss attributable to noncontrolling interest | (58) | — | (58) |
| Other comprehensive income attributable to HollyFrontier stockholders | $24,089 | $9,322 | $14,767 |
| | | | |
| Year Ended December 31, 2015 | | | |
| Net unrealized gain on marketable securities | $38 | $14 | $24 |
| Net unrealized loss on hedging instruments | (52,259) | (20,282) | (31,977) |
| Net change in other post-retirement benefit obligations | 79 | 31 | 48 |
| Other comprehensive loss | (52,142) | (20,237) | (31,905) |
| Less other comprehensive income attributable to noncontrolling interest | 144 | — | 144 |

| | | | |
|---|---|---|---|
| Other comprehensive loss attributable to HollyFrontier stockholders | $(52,286) | $(20,237) | $(32,049) |

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The following table presents the income statement line item effects for reclassifications out of accumulated other comprehensive income ("AOCI"):

| AOCI Component | Gain (Loss) Reclassified From AOCI | | | Income Statement Line Item |
|---|---|---|---|---|
| | Years Ended December 31, | | | |
| | 2017 | 2016 | 2015 | |
| | (In thousands) | | | |
| Marketable securities | $— | $(23) | $(51) | Interest income |
| | — | — | 42 | Other, net |
| | — | (23) | (9) | |
| | — | (9) | (3) | Income tax benefit |
| | — | (14) | (6) | Net of tax |
| | | | | |
| Hedging instruments: | | | | |
| Commodity price swaps | 7,836 | (20,293) | 245,819 | Sales and other revenues |
| | (299) | — | (179,700) | Cost of products sold |
| | (19,244) | (21,864) | (17,607) | Operating expenses |
| Interest rate swaps | 179 | (508) | (2,100) | Interest expense |
| | (11,528) | (42,665) | 46,412 | |
| | (4,490) | (16,387) | 18,454 | Income tax expense (benefit) |
| | (7,038) | (26,278) | 27,958 | Net of tax |
| | (74) | 320 | 1,273 | Noncontrolling interest |
| | (7,112) | (25,958) | 29,231 | Net of tax and noncontrolling interest |
| | | | | |
| Other post-retirement benefit obligations: | | | | |
| Post-retirement healthcare obligation | 87 | 130 | 271 | Cost of products sold |
| | 3,012 | 2,989 | 2,681 | Operating expenses |
| | 382 | 363 | 347 | Selling, general and administrative expenses |
| | 3,481 | 3,482 | 3,299 | |
| | 1,347 | 1,348 | 1,277 | Income tax expense |
| | 2,134 | 2,134 | 2,022 | Net of tax |
| | | | | |
| Retirement restoration plan | (17) | (15) | (20) | Selling, general and administrative expenses |
| | (7) | (6) | (8) | Income tax benefit |
| | (10) | (9) | (12) | Net of tax |
| | | | | |
| Total reclassifications for the period | $(4,988) | $(23,847) | $31,235 | |

Accumulated other comprehensive income in the equity section of our consolidated balance sheets includes:

| | Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| | (In thousands) | |
| Foreign currency translation adjustment | $14,377 | $— |

| | | |
|---|---|---|
| Unrealized loss on pension obligation | (654 ) | — |
| Unrealized gain on post-retirement benefit obligations | 16,939 | 20,055 |
| Unrealized gain on marketable securities | — | 3 |
| Unrealized loss on hedging instruments, net of noncontrolling interest | (793 ) | (9,446 ) |
| Accumulated other comprehensive income | $29,869 | $10,612 |

NOTE 17: Post-retirement Plans

In connection with our PCLI acquisition, we agreed to establish employee benefit plans including union and non-union pension plans and a post-retirement healthcare plan for PCLI employees that were previously covered under legacy Suncor plans.

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Our agreement with Suncor also provides that pension assets related to the union and non-union pension plans will be transferred from the Suncor plans to a pension trust established by us and will be computed in accordance with the share purchase agreement, subject to regulatory approval. Our purchase price allocation as of February 1, 2017 included estimates of the amount of pension benefit obligation and the pension assets to be transferred using actuarial estimates. The actual asset transfer to our PCLI pension plan trust will be a cash transfer that is expected to occur in 2018. As of December 31, 2017, the plan asset balance represents a receivable for the pending transfer from the Suncor plans.

The following table sets forth the changes in the benefit obligation and plan assets of our PCLI pension plans for the eleven months ended December 31, 2017:

| | February 1, 2017 to December 31, 2017 (In thousands) |
|---|---|
| Change in plans' benefit obligations | |
| Pension plans' benefit obligation at acquisition | $ 52,155 |
| Service cost | 3,598 |
| Interest cost | 1,979 |
| Actuarial loss | 4,503 |
| Benefits paid | (966 ) |
| Foreign currency exchange rate changes | 2,313 |
| Pension plans' benefit obligation - end of year | $ 63,582 |
| | |
| Change in pension plans assets | |
| Fair value of plans assets at acquisition | $ 51,870 |
| Actual return on plans assets | 6,182 |
| Benefits paid | (966 ) |
| Foreign currency exchange rate changes | 2,175 |
| Fair value of plans assets - end of year | $ 59,261 |
| | |
| Funded status | |
| Under-funded balance | $ (4,321 ) |
| | |
| Amounts recognized in consolidated balance sheets | |
| Accrued pension liability | $ (4,321 ) |
| | |
| Amounts recognized in accumulated other comprehensive income | |
| Cumulative actuarial loss | $ 1,162 |

The accumulated benefit obligation was $52.8 million at December 31, 2017. The measurement date used for our pension plans was December 31, 2017.

The weighted average assumptions used to determine end of period benefit obligations:

| | December 31, 2017 |
|---|---|
| Discount rate | 3.40 % |
| Rate of future compensation increases | 3.00 % |

Net periodic pension expense consisted of the following components:

| | February 1, 2017 to December 31, 2017 (In thousands) |
|---|---|
| Service cost - benefit earned during the period | $ 3,598 |
| Interest cost on projected benefit obligations | 1,979 |
| Expected return on plans assets | (2,841 ) |
| Net periodic pension expense | $ 2,736 |

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The weighted average assumptions used to determine net periodic pension expense:

| | February 1, 2017 to December 31, 2017 |
|---|---|
| Discount rate | 3.80 % |
| Rate of future compensation increases | 3.00 % |
| Expected long-term rate of return on assets | 5.75 % |

Benefit payments, which reflect expected future service, are expected to be paid as follows: $0.8 million in 2018, $1.2 million in 2019, $1.5 million in 2020, $1.8 million in 2021, $2.1 million in 2022 and $14.9 million in 2023 to 2027.

Post-retirement Healthcare Plans
We have a post-retirement healthcare and other benefits plan that is available to certain of our employees who satisfy certain age and service requirements. This plan is unfunded and provides differing levels of healthcare benefits dependent upon hire date and work location. Not all of our employees are covered by this plan at December 31, 2017. In addition, we established a post-retirement healthcare and other benefits plan for our PCLI employees.

The following table sets forth the changes in the benefit obligation and plan assets of our post-retirement healthcare plans for the years ended December 31, 2017 and 2016:

| | Years Ended December 31, | |
|---|---|---|
| | 2017 | 2016 |
| | (In thousands) | |
| Change in plan’s benefit obligation | | |
| Post-retirement plan's benefit obligation - beginning of year | $18,992 | $21,201 |
| PCLI acquisition | 8,212 | — |
| Service cost | 1,511 | 1,294 |
| Interest cost | 987 | 787 |
| Participant contributions | 181 | 244 |
| Amendments | — | 21 |
| Benefits paid | (1,800 ) | (2,171 ) |
| Actuarial loss (gain) | 1,058 | (2,384 ) |
| Foreign currency exchange rate changes | 358 | — |
| Post-retirement plans' benefit obligation - end of year | $29,499 | $18,992 |
| | | |
| Change in plan assets | | |
| Fair value of plan assets - beginning of year | $— | $— |
| Employer contributions | 1,542 | 1,927 |
| Participant contributions | 258 | 244 |
| Benefits paid | (1,800 ) | (2,171 ) |
| Fair value of plan assets - end of year | $— | $— |

| | | |
|---|---|---|
| Funded status | | |
| Under-funded balance | $(29,499) | $(18,992) |
| | | |
| Amounts recognized in consolidated balance sheets | | |
| Accrued post-retirement liability | $(29,499) | $(18,992) |
| | | |
| Amounts recognized in accumulated other comprehensive income | | |
| Cumulative actuarial (loss) gain | $(287 ) | $771 |
| Prior service credit | 28,953 | 32,434 |
| Total | $28,666 | $33,205 |

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Benefit payments, which reflect expected future service, are expected to be paid as follows: $1.9 million in 2018; $1.6 million in 2019; $1.6 million in 2020; $1.7 million in 2021; $1.7 million in 2022; and $8.2 million in 2023 through 2027.

The weighted average assumptions used to determine end of period benefit obligations:

| | December 31, 2017 | | December 31, 2016 |
|---|---|---|---|
| | HFC | PCLI | HFC |
| Discount rate | 3.35 % | 3.40 % | 3.75 % |
| Current health care trend rate | 7.00 % | 6.50 % | 7.00 % |
| Ultimate health care trend rate | 5.00 % | 5.00 % | 5.00 % |
| Year rate reaches ultimate trend rate | 2028 | 2022 | 2030 |

Net periodic post-retirement credit consisted of the following components:

| | Years Ended December 31, | | |
|---|---|---|---|
| | 2017 | 2016 | 2015 |
| | (In thousands) | | |
| Service cost – benefit earned during the year | $1,511 | $1,294 | $1,694 |
| Interest cost on projected benefit obligations | 987 | 787 | 819 |
| Amortization of prior service credit | (3,481 ) | (3,482 ) | (3,482 ) |
| Amortization of net loss | — | — | 183 |
| Net periodic post-retirement credit | $(983 ) | $(1,401 ) | $(786 ) |

Prior service credits are amortized over the average remaining effective period to obtain full benefit eligibility for participants.

Assumed health care cost trend rates have an effect on the amounts reported for the post-retirement health care benefit plan. The weighted average assumptions used to determine net periodic benefit expense follow:

| | Years Ended December 31, | | | |
|---|---|---|---|---|
| | 2017 | | 2016 | 2015 |
| | HFC | PCLI | HFC | |
| Discount rate | 3.75 % | 3.80 % | 3.90 % | 3.60 % |
| Current health care trend rate | 7.00 % | 6.50 % | 8.00 % | 8.00 % |
| Ultimate health care trend rate | 5.00 % | 5.00 % | 5.00 % | 5.00 % |
| Year rate reaches ultimate trend rate | 2030 | 2022 | 2041 | 2042 |

The effect of a 1% change in health care cost trend rates is as follows:

| | 1% Point Increase | 1% Point Decrease |
|---|---|---|
| | (In thousands) | |
| Service cost | $175 | $(146 ) |
| Interest cost | $48 | $(42 ) |

| | | |
|---|---|---|
| Year-end accumulated post-retirement benefit obligation | $1,393 | $(1,204 ) |

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Retirement Restoration Plan
We have an unfunded retirement restoration plan that provides for additional payments from us so that total retirement plan benefits for certain executives will be maintained at the levels provided in the retirement plan before the application of Internal Revenue Code limitations. We expensed $0.1 million, $0.1 million and $0.1 million for the years ended December 31, 2017, 2016 and 2015, respectively, in connection with this plan. The accrued liability reflected in the consolidated balance sheets was $2.7 million and $2.7 million at December 31, 2017 and 2016, respectively. As of December 31, 2017, the projected benefit obligation under this plan was $2.7 million. Annual benefit payments of $0.2 million are expected to be paid through 2027, which reflect expected future service.

Defined Contribution Plan
We have a defined contribution “401(k)” plan that covers substantially all U.S. employees. Our contributions are based on an employee's eligible compensation and years of service. We also partially match our employees’ contributions. We expensed $17.6 million, $17.5 million and $17.2 million for the years ended December 31, 2017, 2016 and 2015, respectively, in connection with this plan.

NOTE 18: Lease Commitments

We lease certain office and storage facilities, rail cars and other equipment under long-term operating leases, most of which contain renewal options. At December 31, 2017, the minimum future rental commitments under operating leases having non-cancellable lease terms in excess of one year are as follows:

| | (In thousands) |
|---|---|
| 2018 | $ 82,345 |
| 2019 | 74,987 |
| 2020 | 70,654 |
| 2021 | 58,571 |
| 2022 | 51,019 |
| Thereafter | 88,626 |
| Total | $ 426,202 |

Rental expense charged to operations was $95.7 million, $93.2 million and $107.3 million for the years ended December 31, 2017, 2016 and 2015, respectively.

NOTE 19: Contingencies and Contractual Commitments

We are a party to various litigation and legal proceedings which we believe, based on advice of counsel, will not either individually or in the aggregate have a materially adverse effect on our financial condition, results of operations or cash flows.

Contractual Commitments
We have various long-term agreements (entered in the normal course of business) to purchase crude oil, natural gas, feedstocks and other resources to ensure we have adequate supplies to operate our refineries. The substantial majority

of our purchase obligations are based on market prices or rates. These contracts expire in 2019 through 2033.

We also have long-term agreements with third parties for the transportation and storage of crude oil, natural gas and feedstocks to our refineries and for terminal and storage services that expire in 2018 through 2033. At December 31, 2017, the minimum future transportation and storage fees under transportation agreements having terms in excess of one year are as follows:

| | (In thousands) |
|---|---|
| 2018 | $148,716 |
| 2019 | 132,547 |
| 2020 | 119,639 |
| 2021 | 107,400 |
| 2022 | 102,884 |
| Thereafter | 857,454 |
| Total | $1,468,640 |

Transportation and storage costs incurred under these agreements totaled $140.5 million, $135.1 million and $137.7 million for the years ended December 31, 2017, 2016 and 2015, respectively. These amounts do not include contractual commitments under our long-term transportation agreements with HEP, as all transactions with HEP are eliminated in these consolidated financial statements.

We have a crude oil supply contract that requires the supplier to deliver a specified volume of crude oil or pay a shortfall fee for the difference in the actual barrels delivered to us less the specified barrels per the supply contract. For the contract year ended August 31, 2017, the actual number of barrels delivered to us was substantially less than the specified barrels, and we recorded a reduction to cost of goods sold and accumulated a shortfall fee receivable of $26.0 million during this period. In September 2017, the supplier notified us they are disputing the shortfall fee owed and in October 2017 notified us of their demand for arbitration. We offset the receivable with payments of invoices for deliveries of crude oil received subsequent to August 31, 2017, which is permitted under the supply contract. We believe the disputes and claims made by the supplier are without merit.

In March, 2006, a subsidiary of ours sold the assets of Montana Refining Company under an Asset Purchase Agreement ("APA"). Calumet Montana Refining LLC, the current owner of the assets, has submitted requests for reimbursement of approximately $20.0 million pursuant to contractual indemnity provisions under the APA for various costs incurred, as well as additional claims related to environmental matters. We have rejected most of the claims for payment, and this matter is scheduled for arbitration beginning in July 2018. We have accrued the costs we believe are owed pursuant to the APA, and we estimate that any reasonably possible losses beyond the amounts accrued are not material.

## NOTE 20: Segment Information

Effective fourth quarter of 2017, we revised our reportable segments to align with certain changes in how our chief operating decision maker manages and allocates resources to our business. Accordingly, our Tulsa Refineries' lubricants operations, previously reported in the Refining segment, are now combined with the operations of our Petro-Canada Lubricants business (acquired February 1, 2017) and reported in the Lubricants and Specialty Products segment. Our prior period segment information has been retrospectively adjusted to reflect our current segment presentation.

Our operations are organized into three reportable segments, Refining, Lubricants and Specialty Products and HEP. Our operations that are not included in the Refining, Lubricants and Specialty Products and HEP segments are included in Corporate and Other. Intersegment transactions are eliminated in our consolidated financial statements and are included in Eliminations. Corporate and Other and Eliminations are aggregated and presented under Corporate, Other and Eliminations column.

The Refining segment represents the operations of the El Dorado, Tulsa, Navajo, Cheyenne and Woods Cross Refineries and HFC Asphalt (aggregated as a reportable segment). Refining activities involve the purchase and refining of crude oil and wholesale and branded marketing of refined products, such as gasoline, diesel fuel and jet fuel. These petroleum products are primarily marketed in the Mid-Continent, Southwest and Rocky Mountain regions of the United States. HFC Asphalt operates various asphalt terminals in Arizona, New Mexico and Oklahoma.

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The Lubricants and Specialty Products segment involves PCLI's production operations, located in Mississauga, Ontario, that includes lubricant products such as base oils, white oils, specialty products and finished lubricants, and the operations of our Petro-Canada Lubricants business that includes the marketing of products to both retail and wholesale outlets through a global sales network with locations in Canada, the United States, Europe and China. Additionally, the Lubricants and Specialty Products segment includes specialty lubricant products produced at our Tulsa Refineries that are marketed throughout North America and are distributed in Central and South America.

The HEP segment includes all of the operations of HEP, which owns and operates logistics and refinery assets consisting of petroleum product and crude oil pipelines, terminals, tankage, loading rack facilities and processing units in the Mid-Continent, Southwest and Rocky Mountain regions of the United States. The HEP segment also includes a 75% ownership interest in UNEV (a consolidated subsidiary of HEP) and 50% ownership interest in each of the Osage Pipeline and the Cheyenne Pipeline. Revenues from the HEP segment are earned through transactions with unaffiliated parties for pipeline transportation, rental and terminalling operations as well as revenues relating to pipeline transportation services provided for our refining operations. Due to certain basis differences, our reported amounts for the HEP segment may not agree to amounts reported in HEP's periodic public filings.

The accounting policies for our segments are the same as those described in the summary of significant accounting policies (see Note 1).

| | Refining | Lubricants and Specialty Products | HEP | Corporate, Other and Eliminations | Consolidated Total |
|---|---|---|---|---|---|
| | (In thousands) | | | | |
| Year Ended December 31, 2017 | | | | | |
| Sales and other revenues: | | | | | |
| Revenues from external customers | $12,579,672 | $1,594,036 | $77,225 | $366 | $14,251,299 |
| Intersegment revenues | 338,390 | — | 377,137 | (715,527) | — |
| | $12,918,062 | $1,594,036 | $454,362 | $(715,161) | $14,251,299 |
| Cost of products sold (exclusive of lower of cost or market inventory valuation adjustment) | $11,009,345 | $1,093,984 | $— | $(635,530) | $11,467,799 |
| Lower of cost or market inventory valuation adjustment | (107,479) | (1,206) | — | — | (108,685) |
| Operating expenses | $1,006,675 | $222,461 | $137,605 | $(72,507) | $1,294,234 |
| Selling, general and administrative expenses | $103,067 | $105,112 | $14,323 | $42,372 | $264,874 |
| Depreciation and amortization | $289,434 | $31,894 | $77,660 | $10,949 | $409,937 |
| Asset impairment | $19,247 | $— | $— | $— | $19,247 |
| Income (loss) from operations | $597,773 | $141,791 | $224,774 | $(60,445) | $903,893 |
| Earnings of equity method investments | $— | $— | $12,510 | $— | $12,510 |
| Capital expenditures | $176,533 | $31,464 | $44,810 | $19,452 | $272,259 |
| Total assets | $6,474,666 | $1,610,472 | $2,191,984 | $415,032 | $10,692,154 |

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| | Refining | Lubricants and Specialty Products | HEP | Corporate, Other and Eliminations | Consolidated Total |
|---|---|---|---|---|---|
| | (In thousands) | | | | |
| Year Ended December 31, 2016 | | | | | |
| Sales and other revenues: | | | | | |
| Revenues from external customers | $10,002,831 | $464,359 | $68,927 | $(417) | $10,535,700 |
| Intersegment revenues | 317,884 | — | 333,116 | (651,000) | — |
| | $10,320,715 | $464,359 | $402,043 | $(651,417) | $10,535,700 |
| Cost of products sold (exclusive of lower of cost or market inventory valuation adjustment) | $9,003,505 | $377,136 | $— | $(614,714) | $8,765,927 |
| Lower of cost or market inventory valuation adjustment | $(287,848) | $(4,090) | $— | $— | $(291,938) |
| Operating expenses | $909,724 | $13,867 | $123,984 | $(28,736) | $1,018,839 |
| Selling, general and administrative expenses | $92,297 | $2,899 | $12,532 | $17,920 | $125,648 |
| Depreciation and amortization | $281,701 | $620 | $68,811 | $11,895 | $363,027 |
| Goodwill and asset impairment | $654,084 | $— | $— | $— | $654,084 |
| Income (loss) from operations | $(332,748) | $73,927 | $196,716 | $(37,782) | $(99,887) |
| Earnings of equity method investments | $— | $— | $14,213 | $— | $14,213 |
| Capital expenditures | $357,407 | $5,708 | $107,595 | $9,080 | $479,790 |
| Total assets | $6,048,091 | $465,715 | $1,920,487 | $1,001,368 | $9,435,661 |
| Year Ended December 31, 2015 | | | | | |
| Sales and other revenues: | | | | | |
| Revenues from external customers | $12,677,901 | $493,282 | $66,654 | $83 | $13,237,920 |
| Intersegment revenues | 361,211 | — | 292,221 | (653,432) | — |
| | $13,039,112 | $493,282 | $358,875 | $(653,349) | $13,237,920 |
| Cost of products sold (exclusive of lower of cost or market inventory valuation adjustment) | $10,472,268 | $414,553 | $— | $(647,603) | $10,239,218 |
| Lower of cost or market inventory valuation adjustment | $225,736 | $1,243 | $— | $— | $226,979 |
| Operating expenses | $940,629 | $14,042 | $105,554 | $148 | $1,060,373 |
| Selling, general and administrative expenses | $91,279 | $2,615 | $12,556 | $14,396 | $120,846 |
| Depreciation and amortization | $273,091 | $254 | $61,690 | $11,116 | $346,151 |
| Income (loss) from operations | $1,036,109 | $60,575 | $179,075 | $(31,406) | $1,244,353 |
| Earnings (loss) of equity method investments | $— | $— | $4,803 | $(8,541) | $(3,738) |
| Capital expenditures | $461,326 | $7,685 | $193,121 | $14,023 | $676,155 |
| Total assets | $6,286,154 | $320,510 | $1,802,970 | $(21,335) | $8,388,299 |

NOTE 21: Significant Customers

We have two significant customers (Shell Oil and Sinclair), each of which has historically accounted for approximately 10% of our annual revenues. Shell Oil accounted for $1,317.9 million (9%), $1,048.2 million (10%) and $1,252.6 million (9%) for the years ended December 31, 2017, 2016 and 2015, respectively, and Sinclair accounted for $1,135.7 million (8%), $927.0 million (9%) and $1,104.9 million (8%) of our revenues for the years ended December 31, 2017, 2016 and 2015, respectively.

Non-U.S. sales represented 7% of our revenues for the year ended December 31, 2017. The Canadian market represents our largest concentration of foreign sales and accounted for 4% of our revenues for the year ended December 31, 2017.

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NOTE 22: Quarterly Information (Unaudited)

| | First Quarter | Second Quarter | Third Quarter | Fourth Quarter | Year |
|---|---|---|---|---|---|
| | (In thousands, except per share data) | | | | |
| Year Ended December 31, 2017 | | | | | |
| Sales and other revenues | $3,080,483 | $3,458,864 | $3,719,247 | $3,992,705 | $14,251,299 |
| Operating costs and expenses | $3,113,207 | $3,337,179 | $3,269,967 | $3,627,053 | $13,347,406 |
| Income (loss) from operations [1,2] | $(32,724) | $121,685 | $449,280 | $365,652 | $903,893 |
| Income (loss) before income taxes | $(54,571) | $106,069 | $446,103 | $371,262 | $868,863 |
| Net income (loss) attributable to HollyFrontier stockholders | $(45,468) | $57,767 | $272,014 | $521,082 | $805,395 |
| Net income (loss) per share attributable to HollyFrontier stockholders - basic | $(0.26) | $0.33 | $1.53 | $2.94 | $4.54 |
| Net income (loss) per share attributable to HollyFrontier stockholders - diluted | $(0.26) | $0.33 | $1.53 | $2.92 | $4.52 |
| Dividends per common share | $0.33 | $0.33 | $0.33 | $0.33 | $1.32 |
| Average number of shares of common stock outstanding: | | | | | |
| Basic | 176,210 | 176,147 | 176,149 | 176,265 | 176,174 |
| Diluted | 176,210 | 176,302 | 176,530 | 177,457 | 177,196 |
| | | | | | |
| Year Ended December 31, 2016 | | | | | |
| Sales and other revenues | $2,018,724 | $2,714,638 | $2,847,270 | $2,955,068 | $10,535,700 |
| Operating costs and expenses | $1,935,126 | $3,135,180 | $2,722,505 | $2,842,776 | $10,635,587 |
| Income (loss) from operations [3] [4] | $83,598 | $(420,542) | $124,765 | $112,292 | $(99,887) |
| Income (loss) before income taxes | $65,698 | $(430,515) | $109,867 | $83,416 | $(171,534) |
| Net income (loss) attributable to HollyFrontier stockholders | $21,253 | $(409,368) | $74,497 | $53,165 | $(260,453) |
| Net income (loss) per share attributable to HollyFrontier stockholders - basic | $0.12 | $(2.33) | $0.42 | $0.30 | $(1.48) |
| Net income (loss) per share attributable to HollyFrontier stockholders - diluted | $0.12 | $(2.33) | $0.42 | $0.30 | $(1.48) |
| Dividends per common share | $0.33 | $0.33 | $0.33 | $0.33 | $1.32 |
| Average number of shares of common stock outstanding: | | | | | |
| Basic | 176,737 | 175,865 | 175,871 | 175,936 | 176,101 |
| Diluted | 176,784 | 175,865 | 175,993 | 176,137 | 176,101 |

(1) For 2017, income from operations reflects non-cash lower of cost or market inventory valuation charges of $11.8 million and $84.0 million for the first and second quarters, respectively, and a reduction of $111.1 million and $93.4 million for the third and fourth quarters, respectively.

(2) For 2017, income from operations reflects long-lived asset impairment charges of $23.2 million in the second quarter.

(3) For 2016, income from operations reflects non-cash lower of cost or market inventory valuation reductions of $56.1 million and $138.5 million for the first and second quarters, respectively, and increases of $0.3 million for the third quarter and a reduction of $97.7 million for the fourth quarter.

(4) For 2016, income from operations reflects non-cash goodwill and long-lived asset impairment charges of $309.3 million and $344.8 million , respectively, in the second quarter.

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

We have had no change in, or disagreement with, our independent registered public accountants on matters involving accounting and financial disclosure.

## Item 9A. Controls and Procedures

Evaluation of disclosure controls and procedures. Our principal executive officer and principal financial officer have evaluated, as required by Rule 13a-15(b) under the Securities Exchange Act of 1934 (the "Exchange Act"), our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e)) under the Exchange Act as of the end of the period covered by this annual report on Form 10-K. Our disclosure controls and procedures are designed to provide reasonable assurance that the information we are required to disclose in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure and is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms. Based upon the evaluation, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2017.

Changes in internal control over financial reporting. There have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during our last fiscal quarter that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

See Item 8 for "Management's Report on its Assessment of the Company's Internal Control Over Financial Reporting" and "Report of the Independent Registered Public Accounting Firm."

## Item 9B. Other Information

There have been no events that occurred in the fourth quarter of 2017 that would need to be reported on Form 8-K that have not previously been reported.

# 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 the annual meeting of stockholders to be held on May 9, 2018 and is incorporated herein by reference.

## 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 the annual meeting of stockholders to be held on May 9, 2018 and is incorporated herein by reference.

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

The equity compensation plan information required by Item 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 the annual meeting of stockholders to be held on May 9, 2018 and is incorporated herein by reference.

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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 the annual meeting of stockholders to be held on May 9, 2018 and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

The information required by Item 9(e) of Schedule 14A in response to this item will be set forth in our definitive proxy statement for the annual meeting of stockholders to be held on May 9, 2018 and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) Documents filed as part of this report

(1) Index to Consolidated Financial Statements


| | Page in Form 10-K |
|---|---|
| Report of Independent Registered Public Accounting Firm | 57 |
| Consolidated Balance Sheets at December 31, 2017 and 2016 | 58 |
| Consolidated Statements of Income for the years ended December 31, 2017, 2016 and 2015 | 59 |
| Consolidated Statements of Comprehensive Income for the years ended December 31, 2017, 2016 and 2015 | 60 |
| Consolidated Statements of Cash Flows for the years ended December 31, 2017, 2016 and 2015 | 61 |
| Consolidated Statements of Equity for the years ended December 31, 2017, 2016 and 2015 | 62 |
| Notes to Consolidated Financial Statements | 63 |


(2) Index to Consolidated Financial Statement Schedules

All schedules are omitted since the required information is not present or is not present in amounts sufficient to require submission of the schedule, or because the information required is included in the consolidated financial statements or notes thereto.

(3) Exhibits

The Exhibit Index on pages 102 to 107 of this Annual Report on Form 10-K lists the exhibits that are filed or furnished, as applicable, as part of this Annual Report on Form 10-K.

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HOLLYFRONTIER CORPORATION
INDEX TO EXHIBITS

Exhibits are numbered to correspond to the exhibit table in Item 601 of Regulation S-K

| Exhibit Number | Description |
|---|---|
| 2.1 | Asset Sale and Purchase Agreement, dated October 19, 2009, between Holly Refining & Marketing-Tulsa LLC, HEP Tulsa LLC and Sinclair Tulsa Refining Company (incorporated by reference to Exhibit 2.1 of Registrant's Current Report on Form 8-K filed October 21, 2009, File No. 1-03876). |
| 2.2 | Amendment No. 1 to Asset Sale and Purchase Agreement, dated December 1, 2009, between Holly Refining & Marketing-Tulsa LLC, HEP Tulsa LLC and Sinclair Tulsa Refining Company (incorporated by reference to Exhibit 2.1 of Registrant's Current Report on Form 8-K filed December 7, 2009, File No. 1-03876). |
| 2.3 | Asset Sale and Purchase Agreement, dated April 15, 2009, between Holly Refining & Marketing-Midcon, L.L.C. and Sunoco, Inc. (incorporated by reference to Exhibit 2.1 of Registrant's Current Report on Form 8-K filed April 16, 2009, File No. 1-03876). |
| 2.4 | Share Purchase Agreement, dated October 29, 2016, by and between Suncor Energy Inc. and 9952110 Canada Inc. (incorporated by reference to Exhibit 2.1 of Registrant's Current Report on Form 8-K filed October 31, 2016, File No. 1-03876). |
| 2.5 | Equity Restructuring Agreement, dated as of October 18, 2017, by and between HEP Logistics Holdings, L.P. and Holly Energy Partners, L.P. (incorporated by reference to Exhibit 2.1 of Registrant's Current Report on Form 8-K filed October 19, 2017, File No. 1-03876). |
| 3.1 | Amended and Restated Certificate of Incorporation of HollyFrontier Corporation (incorporated by reference to Exhibit 3.1 of Registrant's Current Report on Form 8-K filed July 8, 2011, File No. 1-03876). |
| 3.2 | Amended and Restated Bylaws of HollyFrontier Corporation (incorporated by reference to Exhibit 3.1 of Registrant's Current Report on Form 8-K filed February 20, 2014, File No. 1-03876). |
| 4.1 | Indenture, dated July 19, 2016, among Holly Energy Partners, L.P., Holly Energy Finance Corp., and each of the Guarantors party thereto and U.S. Bank National Association (incorporated by reference to Exhibit 4.1 of Holly Energy Partners, L.P.'s Current Report on Form 8-K filed July 19, 2016, File Number 1-32225). |
| 4.2 | First Supplemental Indenture, dated November 2, 2016, among Woods Cross Operating LLC, Holly Energy Partners, L.P., and Holly Energy Finance Corp., the other Guarantors and U.S. Bank National Association (incorporated by reference to Exhibit 4.3 of Holly Energy Partners, L.P.'s Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2016, File Number 1-32225). |
| 4.3 | Second Supplemental Indenture, dated July 26, 2017, by and among Holly Energy Holdings LLC, HEP Cheyenne Shortline LLC, Holly Energy Partners, L.P., Holly Energy Finance Corp., the other guarantors therein and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 of Registrant's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2017, File No. |

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| | 1-03876). |
| 4.4 | Indenture, dated March 22, 2016, between HollyFrontier Corporation and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.1 of Registrant's Current Report on Form 8-K filed March 22, 2016, File No. 1-03876). |
| 4.5 | Supplemental Indenture, dated March 22, 2016, between HollyFrontier Corporation and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.2 of Registrant's Current Report on Form 8-K filed March 22, 2016, File No. 1-03876). |
| 10.1 | Amended and Restated Intermediate Pipelines Agreement, dated June 1, 2009, among Holly Corporation, Navajo Refining Company, L.L.C, Holly Energy Partners, L.P., Holly Energy Partners – Operating, L.P., HEP Pipeline, L.L.C., Lovington-Artesia, L.L.C., HEP Logistics Holdings, L.P., Holly Logistics Services, L.L.C. and HEP Logistics GP, L.L.C. (incorporated by reference to Exhibit 10.2 of Holly Energy Partners, L.P.'s Current Report on Form 8-K filed June 5, 2009, File No. 1-32225). |
| 10.2 | Amendment to Amended and Restated Intermediate Pipelines Agreement, dated December 9, 2010, among Navajo Refining Company, L.L.C, Holly Energy Partners, L.P., Holly Energy Partners – Operating, L.P., HEP Pipeline, L.L.C., Lovington-Artesia, L.L.C., HEP Logistics Holdings, L.P., Holly Logistics Services, L.L.C. and HEP Logistics GP, L.L.C. (incorporated by reference to Exhibit 10.4 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2010, File No. 1-03876). |

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| Exhibit Number | Description |
|---|---|
| 10.3 | Assignment and Assumption Agreement (Amended and Restated Intermediate Pipelines Agreement), effective January 1, 2011, between Navajo Refining Company, L.L.C. and Holly Refining & Marketing Company LLC (incorporated by reference to Exhibit 10.5 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2010, File No. 1-03876). |
| 10.4 | Tulsa Equipment and Throughput Agreement, dated August 1, 2009, between Holly Refining & Marketing - Tulsa LLC and HEP Tulsa LLC (incorporated by reference to Exhibit 10.3 of Holly Energy Partners L.P.'s Current Report on Form 8-K filed August 6, 2009, File No. 1-32225). |
| 10.5 | Amendment to Tulsa Equipment and Throughput Agreement, dated December 9, 2010, among Holly Refining & Marketing - Tulsa LLC and HEP Tulsa LLC (incorporated by reference to Exhibit 10.7 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2010, File No. 1-03876). |
| 10.6 | Assignment and Assumption Agreement (Tulsa Equipment and Throughput Agreement), effective January 1, 2011, between Holly Refining & Marketing - Tulsa, LLC and Holly Refining & Marketing Company LLC (incorporated by reference to Exhibit 10.8 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2010, File No. 1-03876). |
| 10.7 | Tulsa Purchase Option Agreement, dated August 1, 2009, between Holly Refining & Marketing - Tulsa LLC and HEP Tulsa LLC (incorporated by reference to Exhibit 10.4 of Holly Energy Partners L.P.'s Current Report on Form 8-K filed August 6, 2009, File No. 1-32225). |
| 10.8 | Third Amended and Restated Crude Pipelines and Tankage Agreement, dated March 12, 2015, by and among Navajo Refining Company, L.L.C., Holly Refining & Marketing Company - Woods Cross LLC, HollyFrontier Refining & Marketing LLC, Holly Energy Partners-Operating, L.P., HEP Pipeline, L.L.C. and HEP Woods Cross L.L.C. (incorporated by reference to Exhibit 10.2 of Registrant's Current Report on Form 8-K filed March 16, 2015, File No. 1-03876). |
| 10.9 | Second Amended and Restated Refined Products Pipelines and Terminals Agreement, dated February 22, 2016, by and among HollyFrontier Refining & Marketing LLC, HollyFrontier Corporation, Holly Energy Partners - Operating, L.P. and Holly Energy Partners, L.P. (incorporated by reference to Exhibit 10.3 of Registrant's Current Report on Form 8-K filed February 22, 2016, File No. 1-03876). |
| 10.10 | Second Amended and Restated Throughput Agreement (Tucson Terminal), dated September 19, 2013, effective June 1, 2013, among HollyFrontier Refining & Marketing LLC, HEP Refining, L.L.C. and Holly Energy Partners - Operating, L.P. (incorporated by reference to Exhibit 10.4 of Registrant's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2013, File No. 1-03876). |
| 10.11* | Eighteenth Amended and Restated Omnibus Agreement, dated January 19, 2018, effective December 8, 2017, by and among HollyFrontier Corporation, Holly Energy Partners, L.P. and certain of their respective subsidiaries. |
| 10.12 | Senior Unsecured 5-Year Revolving Credit Agreement, dated July 1, 2014, among HollyFrontier Corporation, as borrower, Union Bank, N. A. as administrative agent, and each of the financial institutions party thereto as lenders (incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed July 8, 2014, File No. 1-03876). |

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| 10.13 | First Amendment to Senior Unsecured 5-Year Revolving Credit Agreement, dated as of February 16, 2017, among HollyFrontier Corporation, as borrower, The Bank of Tokyo-Mitsubishi UFJ, Ltd., as administrative agent, and the lenders party thereto (incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed February 21, 2017, File No. 1-03876). |
| 10.14 | Release of Subsidiary Guarantee, dated December 29, 2015, by and among HollyFrontier Corporation and Union Bank, N.A. (incorporated by reference to Exhibit 10.40 of Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2015, File No. 1-03876). |
| 10.15 | Frontier Products Offtake Agreement El Dorado Refinery, dated October 19, 1999, between Frontier Oil and Refining Company and Equiva Trading Company (now Shell Oil Products US, assignee of Equiva Trading Company) ("the Agreement") and First Amendment to the Agreement dated September 18, 2000, Second Amendment to the Agreement dated September 21, 2000, Third Amendment to the Agreement dated December 19, 2000, Fourth Amendment to the Agreement dated February 22, 2001, Fifth Amendment to the Agreement dated August 14, 2001, Sixth Amendment to the Agreement dated November 5, 2001, Seventh Amendment to the Agreement dated April 22, 2002, Eighth Amendment to the Agreement date d May 30, 2003, Ninth Amendment to the Agreement dated May 25, 2004, Tenth Amendment to the Agreement dated May 3, 2005, Eleventh Amendment to the Agreement dated March 31, 2006, Twelfth Amendment to the Agreement dated May 11, 2006, Thirteenth Amendment to the Agreement dated September 30, 2007, Fourteenth Amendment to the Agreement dated May 1, 2008 and Fifteenth Amendment to the Agreement dated May 28, 2008 (incorporated by reference to Exhibit 10.1 to Frontier Oil Corporation's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2008, File No. 1-07627). |

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| Exhibit Number | Description |
|---|---|
| 10.16 | Seventeenth Amendment, dated August 27, 2013, to the Frontier Products Offtake Agreement El Dorado Refinery, dated October 19, 1999, between Frontier Oil and Refining Company (now HollyFrontier Refining & Marketing LLC, as successor-by-merger to Frontier Oil and Refining Company) and Equiva Trading Company (now Shell Oil Products US, assignee of Equiva Trading Company) (incorporated by reference to Exhibit 10.5 of Registrant's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2013, File No. 1-03876). |
| 10.17 | Master Crude Oil Purchase and Sale Contract, dated November 1, 2010, among BNP Paribas Energy Trading GP, BNP Paribas Energy Trading Canada Corp., Frontier Oil and Refining Company and Frontier Oil Corporation (incorporated by reference to Exhibit 10.1 to Frontier Oil Corporation's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2010, File No. 1-07627). |
| 10.18 | Guaranty, dated November 1, 2010, by Frontier Oil Corporation in favor of BNP Paribas Energy Trading GP and BNP Paribas Energy Trading Canada Corp. (incorporated by reference to Exhibit 10.2 to Frontier Oil Corporation's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2010, File No. 1-07627). |
| 10.19 | Amended and Restated Limited Liability Company Agreement of HEP UNEV Holdings LLC, dated July 12, 2012, among HEP UNEV Holdings LLC, HollyFrontier Holdings LLC and Holly Energy Partners, L.P. (incorporated by reference to Exhibit 10.5 to the Registrant's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2012, File No. 1-03876). |
| 10.20 | Refined Products Purchase Agreement, dated December 1, 2009, between Holly Refining & Marketing - Tulsa LLC and Sinclair Tulsa Refining Company (incorporated by reference to Exhibit 10.4 of Registrant's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2013, File No. 1-03876). |
| 10.21 | First Amendment to Refined Products Purchase Agreement, dated May 17, 2010, between Holly Refining & Marketing - Tulsa LLC and Sinclair Tulsa Refining Company (incorporated by reference to Exhibit 10.5 of Registrant's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2013, File No. 1-03876). |
| 10.22 | Second Amendment to Refined Products Purchase Agreement, dated December 19, 2011, between HollyFrontier Refining & Marketing LLC and Sinclair Oil Corporation (incorporated by reference to Exhibit 10.6 of Registrant's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2013, File No 1-03876). |
| 10.23 | Third Amendment to Refined Products Purchase Agreement, dated June 1, 2012, between HollyFrontier Refining & Marketing LLC and Sinclair Oil Corporation (incorporated by reference to Exhibit 10.7 of Registrant's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2013, File No. 1-03876). |
| 10.24 | Fourth Amendment to Refined Products Purchase Agreement, dated February 27, 2014, between HollyFrontier Refining & Marketing LLC and Sinclair Oil Corporation (incorporated by reference to Exhibit 10.55 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2014, |

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| | File No. 1-03876). |
| 10.25 | Fifth Amendment to Refined Products Purchase Agreement dated June 23, 2014, between HollyFrontier Refining & Marketing LLC and Sinclair Oil Corporation (incorporated by reference to Exhibit 10.56 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2014, File No. 1-03876). |
| 10.26 | Amended and Restated Unloading and Blending Services Agreement, dated January 18, 2017, effective September 16, 2016, by and between HollyFrontier Refining & Marketing LLC, Holly Energy Partners - Operating, L.P. and HEP Refining L.L.C. (incorporated by reference to Exhibit 10.26 of Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, File No. 1-03876). |
| 10.27 | Third Amended and Restated Master Throughput Agreement, dated January 18, 2017, effective January 1, 2017, by and between HollyFrontier Refining & Marketing LLC and Holly Energy Partners - Operating, L.P. (incorporated by reference to Exhibit 10.27of Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, File No. 1-03876). |
| 10.28 | Construction Payment Agreement, dated as of October 16, 2015, by and between HEP Refining, L.L.C. and HollyFrontier Refining & Marketing LLC (incorporated by reference to Exhibit 10.3 of Registrant's Current Report on Form 8-K filed October 21, 2015, File No. 1-03876). |
| 10.29 | Third Amended and Restated Services and Secondment Agreement, dated October 3, 2016, by and among Holly Logistic Services, L.L.C., certain subsidiaries of Holly Energy Partners, L.P. and certain subsidiaries of HollyFrontier Corporation (incorporated by reference to Exhibit 10.4 to Registrant's Current Report on Form 8-K filed October 4, 2016, File No. 1-03876). |

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| Exhibit Number | Description |
|---|---|
| 10.30 | Fourth Amended and Restated Master Lease and Access Agreement, dated January 18, 2017, effective January 1, 2017, by and among certain subsidiaries of Holly Energy Partners, L.P. and certain subsidiaries of HollyFrontier Corporation (incorporated by reference to Exhibit 10.30 of Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, File No. 1-03876). |
| 10.31 | First Amendment to Fourth Amended and Restated Master Lease and Access Agreement, dated as of October 13, 2017, by and among certain subsidiaries of Holly Energy Partners, L.P. and certain subsidiaries of HollyFrontier Corporation (incorporated by reference to Exhibit 10.1 of Registrant's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2017, File No. 1-03876). |
| 10.32 | Master Tolling Agreement (Refinery Assets), dated as of November 2, 2015, by and between Frontier El Dorado Refining LLC and Holly Energy Partners-Operating L.P. (incorporated by reference to Exhibit 10.2 of Registrant's Current Report on Form 8-K filed November 3, 2015, File No. 1-03876). |
| 10.33 | Amendment to Master Tolling Agreement (Refinery Assets), dated effective January 1, 2017, by and among HollyFrontier El Dorado Refining LLC, HollyFrontier Woods Cross Refining LLC, and Holly Energy Partners-Operating, L.P. (incorporated by reference to Exhibit 10.7 to the Registrant's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2017, File No. 1-03876). |
| 10.34 | Amended and Restated Master Tolling Agreement (Operating Assets), dated October 3, 2016, by and between HollyFrontier El Dorado Refining LLC, HollyFrontier Woods Cross Refining LLC, Holly Energy Partners - Operating L.P., HollyFrontier Corporation and Holly Energy Partners, L.P. (incorporated by reference to Exhibit 10.2 to Registrant's Current Report on Form 8-K filed October 4, 2016, File No. 1-03876). |
| 10.35 | Amendment to Amended and Restated Master Tolling Agreement (Operating Assets), dated effective January 1, 2017, by and among HollyFrontier El Dorado Refining LLC, HollyFrontier Woods Cross Refining LLC, and Holly Energy Partners-Operating, L.P. (incorporated by reference to Exhibit 10.6 to the Registrant's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2017, File No. 1-03876). |
| 10.36 | LLC Interest Purchase Agreement, dated February 22, 2016, by and among HollyFrontier Refining & Marketing LLC, HollyFrontier Corporation, Holly Energy Partners - Operating, L.P. and Holly Energy Partners, L.P. (incorporated by reference to Exhibit 10.67 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2015, File No. 1-03876). |
| 10.37 | Refined Products Terminal Transfer Agreement, dated February 22, 2016, by and among HEP Refining Assets, L.P., Holly Energy Partners, L.P., El Paso Logistics LLC, HollyFrontier Corporation and Holly Energy Partners - Operating, L.P. (incorporated by reference to Exhibit 10.68 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2015, File No. 1-03876). |
| 10.38 | Second Amended and Restated Pipelines and Terminals Agreement, dated February 22, 2016, by and among HollyFrontier Refining & Marketing LLC, HollyFrontier Corporation, Holly Energy Partners - Operating, L.P. and Holly Energy Partners, L.P. (incorporated by reference to Exhibit 10.3 of Registrant's Current Report on Form 8-K filed February 22, 2016, File No. 1-03876). |

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| 10.39 | Pipeline Deficiency Agreement, dated August 8, 2016, by and between HollyFrontier Refining & Marketing LLC and Holly Energy Partners - Operating, L.P. (incorporated by reference to Exhibit 10.5 to Registrant's Current Report on Form 8-K filed August 10, 2016, File No. 1-03876). |
| 10.40 | LLC Interest Purchase Agreement, dated October 3, 2016, by and between HollyFrontier Corporation, HollyFrontier Woods Cross Refining LLC, Holly Energy Partners - Operating, L.P. and Holly Energy Partners, L.P. (incorporated by reference to Exhibit 10.1 to Registrant's Current Report on Form 8-K filed October 4, 2016, File No. 1-03876). |
| 10.41+ | HollyFrontier Corporation Long-Term Incentive Compensation Plan (formerly the Holly Corporation Long-Term Incentive Compensation Plan), as amended and restated on May 24, 2007 as approved at the Annual Meeting of Stockholders of Holly Corporation on May 24, 2007 (incorporated by reference to Exhibit 10.4 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2008, File No. 1-03876). |
| 10.42+ | First Amendment to the HollyFrontier Corporation Long-Term Incentive Compensation Plan (incorporated by reference to Exhibit 10.5 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2008, File No. 1-03876). |
| 10.43+ | Second Amendment to the HollyFrontier Corporation Long-Term Incentive Compensation Plan (incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed May 18, 2011, File No. 1-03876). |

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| Exhibit Number | Description |
|---|---|
| 10.44+ | Third Amendment to the HollyFrontier Corporation Long-Term Incentive Compensation Plan (incorporated by reference to Exhibit 4.6 of the Registrant's Registration Statement on Form S-8 filed November 9, 2012, File No. 333-184877). |
| 10.45+ | Fourth Amendment to the HollyFrontier Corporation Long-Term Incentive Compensation Plan (incorporated by reference to Exhibit 10.2 of Registrant's Current Report on Form 8-K filed May 15, 2015, File No. 1-03876). |
| 10.46+ | Fifth Amendment to the HollyFrontier Corporation Long-Term Incentive Plan, effective May 11, 2016 (incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed May 16, 2016, File No. 1-03876). |
| 10.47+ | HollyFrontier Corporation Long-Term Incentive Plan UK Sub-Plan, effective February 14, 2017 (incorporated by reference to Exhibit 10.43 of Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, File No. 1-03876). |
| 10.48+ | Holly Corporation Amended and Restated Change in Control Agreement Policy (incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed March 1, 2011, File No. 1-03876). |
| 10.49+ | Holly Corporation Employee Form of Change in Control Agreement (incorporated by reference to Exhibit 10.46 of Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, File No. 1-03876). |
| 10.50+ | Form of Performance Share Unit Agreement (for 162(m) covered employees) (incorporated by reference to Exhibit 4.11 of the Registrant's Registration Statement on Form S-8 filed November 9, 2012, File No. 333-184877). |
| 10.51+ | Form of Performance Share Unit Agreement (for non-162(m) covered employees) (incorporated by reference to Exhibit 4.12 of the Registrant's Registration Statement on Form S-8 filed November 9, 2012, File No. 333-184877). |
| 10.52+* | Form of Performance Share Unit Agreement (for 162(m) covered employees). |
| 10.53+* | Form of Performance Share Unit Agreement (for non-162(m) covered employees). |
| 10.54+ | Form of Restricted Stock Agreement (time-based vesting) (incorporated by reference to Exhibit 10.49 of Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, File No. 1-03876). |
| 10.55+ | Form of Notice of Grant of Restricted Stock (incorporated by reference to Exhibit 10.50 of Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2016, File No. 1-03876). |
| 10.56+ | Form of Restricted Stock Unit Agreement (for non-employee directors) (incorporated by reference to Exhibit 10.63 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2012, File No. 1-03876). |

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| 10.57+ | Form of Notice of Grant of Restricted Stock Units (for non-employee directors) (incorporated by reference to Exhibit 10.64 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2012, File No. 1-03876). |
| 10.58+* | Form of Restricted Stock Unit Agreement (for employees). |
| 10.59+* | Form of Notice of Grant of Restricted Stock Units (for employees). |
| 10.60+ | Form of Indemnification Agreement entered into with directors and officers of Holly Corporation (incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed December 13, 2006, File No. 1-03876). |
| 10.61+ | HollyFrontier Corporation Omnibus Incentive Compensation Plan (formerly the Frontier Oil Corporation Omnibus Incentive Compensation Plan) (incorporated by reference to Exhibit 10.5 of Registrant's Current Report on Form 8-K filed July 8, 2011, File No. 1-03876). |
| 10.62+ | First Amendment to the HollyFrontier Corporation Omnibus Incentive Compensation Plan (incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed May 15, 2015, File No. 1-03876). |
| 10.63+ | Second Amendment to the HollyFrontier Corporation Omnibus Incentive Compensation Plan, dated November 9, 2016 (incorporated by reference to Exhibit 10.56 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2016, File No. 1-03876). |
| 10.64+ | HollyFrontier Corporation Executive Nonqualified Deferred Compensation Plan (formerly the Frontier Deferred Compensation Plan) (incorporated by reference to Exhibit 10.73 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2012, File No. 1-03876). |

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| Exhibit Number | Description |
|---|---|
| 10.65+ | Form of Indemnification Agreement between Frontier and each of its officers and directors (incorporated by reference to Exhibit 10.41 to Frontier Oil Corporation's Annual Report on Form 10-K for its fiscal year ended December 31, 2006, File No. 1-07627). |
| 10.66+ | Form of Indemnification Agreement between HollyFrontier Corporation and each of its officers and directors (incorporated by reference to Exhibit 10.79 of Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2011, File No. 1-03876). |
| 10.67+ | Retirement Agreement, dated January 13, 2017, between HollyFrontier Corporation and Douglas S. Aron (incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed January 13, 2017, File No. 1-03876). |
| 21.1* | Subsidiaries of Registrant |
| 23.1* | Consent of Independent of Registered Public Accounting Firm |
| 31.1* | Certification of Chief Executive Officer under Section 302 of the Sarbanes-Oxley Act of 2002. |
| 31.2* | Certification of Chief Financial Officer under Section 302 of the Sarbanes-Oxley Act of 2002. |
| 32.1** | Certification of Chief Executive Officer under Section 906 of the Sarbanes-Oxley Act of 2002. |
| 32.2** | Certification of Chief Financial Officer under Section 906 of the Sarbanes-Oxley Act of 2002. |
| 101++ | The following financial information from Registrant's Annual Report on Form 10-K for its fiscal year ended December 31, 2017, formatted in XBRL (Extensible Business Reporting Language): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Income, (iii) Consolidated Statements of Comprehensive Income, (iv) Consolidated Statements of Cash Flows, (v) Consolidated Statements of Equity, and (vi) Notes to the Consolidated Financial Statements. |

* Filed herewith.
** Furnished herewith.
+ Constitutes management contracts or compensatory plans or arrangements.
++ Filed electronically herewith.

Table of Content

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.

HOLLYFRONTIER CORPORATION
(Registrant)

Date: February 21, 2018 /s/ George J. Damiris
George J. Damiris
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and as of the date indicated.

| Signature | Capacity | Date |
| --- | --- | --- |
| /s/ George J. Damiris<br>George J. Damiris | Chief Executive Officer, President and Director | February 21, 2018 |
| /s/ Richard L. Voliva III<br>Richard L. Voliva III | Executive Vice President and Chief Financial Officer (Principal Financial Officer) | February 21, 2018 |
| /s/ J.W. Gann, Jr.<br>J.W. Gann, Jr. | Vice President, Controller and Chief Accounting Officer (Principal Accounting Officer) | February 21, 2018 |
| /s/ Michael C. Jennings<br>Michael C. Jennings | Chairman of the Board | February 21, 2018 |
| /s/ Anne-Marie N. Ainsworth<br>Anne-Marie N. Ainsworth | Director | February 21, 2018 |
| /s/ Douglas Y. Bech<br>Douglas Y. Bech | Director | February 21, 2018 |
| /s/ Anna C. Catalano<br>Anna C. Catalano | Director | February 21, 2018 |
| /s/ Leldon Echols<br>Leldon Echols | Director | February 21, 2018 |
| /s/ R. Kevin Hardage<br>R. Kevin Hardage | Director | February 21, 2018 |

| | | |
|---|---|---|
| /s/ Robert J. Kostelnik<br>Robert J. Kostelnik | Director | February 21, 2018 |
| /s/ James H. Lee<br>James H. Lee | Director | February 21, 2018 |
| /s/ Franklin Myers<br>Franklin Myers | Director | February 21, 2018 |
| /s/ Michael E. Rose<br>Michael E. Rose | Director | February 21, 2018 |