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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 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 1-13175

VALERO ENERGY CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**74-1828067**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
One Valero Way	
San Antonio, Texas	**78249**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (210) 345-2000

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

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

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

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

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

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

Large accelerated filer ☑ Accelerated filer ☐ Non-accelerated filer ☐
Smaller reporting company ☐ Emerging growth company ☐

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

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

The aggregate market value of the voting and non-voting common stock held by non-affiliates was approximately $29.8 billion based on the last sales price quoted as of June 30, 2017 on the New York Stock Exchange, the last business day of the registrant's most recently completed second fiscal quarter.

As of January 31, 2018, 433,176,258 shares of the registrant's common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

We intend to file with the Securities and Exchange Commission a definitive Proxy Statement for our Annual Meeting of Stockholders scheduled for May 3, 2018, at which directors will be elected. Portions of the 2018 Proxy Statement are incorporated by reference in Part III of this Form 10-K and are deemed to be a part of this report.

CROSS-REFERENCE SHEET

The following table indicates the headings in the 2018 Proxy Statement where certain information required in Part III of this Form 10-K may be found.

Form 10-K Item No. and Caption	**Heading in 2018 Proxy Statement**
10. Directors, Executive Officers and Corporate Governance	*Information Regarding the Board of Directors, Independent Directors, Audit Committee, Proposal No. 1 Election of Directors*, *Information Concerning Nominees and Other Directors, Identification of Executive Officers, Section 16(a) Beneficial Ownership Reporting Compliance,* and *Governance Documents and Codes of Ethics*
11. Executive Compensation	*Compensation Committee, Compensation Discussion and Analysis, Executive Compensation, Director Compensation, Pay Ratio Disclosure,* and *Certain Relationships and Related Transactions*
12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	*Beneficial Ownership of Valero Securities* and *Equity Compensation Plan Information*
13. Certain Relationships and Related Transactions, and Director Independence	*Certain Relationships and Related Transactions* and *Independent Directors*
14. Principal Accountant Fees and Services	*KPMG LLP Fees* and *Audit Committee Pre-Approval Policy*

Copies of all documents incorporated by reference, other than exhibits to such documents, will be provided without charge to each person who receives a copy of this Form 10-K upon written request to Valero Energy Corporation, Attn: Secretary, P.O. Box 696000, San Antonio, Texas 78269-6000.

CONTENTS

The terms "Valero," "we," "our," and "us," as used in this report, may refer to Valero Energy Corporation, to one or more of our consolidated subsidiaries, or to all of them taken as a whole. In this Form 10-K, we make certain forward-looking statements, including statements regarding our plans, strategies, objectives, expectations, intentions, and resources under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. You should read our forward-looking statements together with our disclosures beginning on page 28 of this report under the heading: "CAUTIONARY STATEMENT FOR THE PURPOSE OF SAFE HARBOR PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995."

PART I

ITEMS 1. and 2. BUSINESS AND PROPERTIES

OVERVIEW

We are a Fortune 500 company based in San Antonio, Texas. Our corporate offices are at One Valero Way, San Antonio, Texas, 78249, and our telephone number is (210) 345-2000. We were incorporated in Delaware in 1981 under the name Valero Refining and Marketing Company. We changed our name to Valero Energy Corporation on August 1, 1997. Our common stock trades on the New York Stock Exchange (NYSE) under the symbol "VLO." On January 31, 2018, we had 10,015 employees.

We own 15 petroleum refineries located in the United States (U.S.), Canada, and the United Kingdom (U.K.) with a combined throughput capacity of approximately 3.1 million barrels per day. Our refineries produce conventional gasolines, premium gasolines, gasoline meeting the specifications of the California Air Resources Board (CARB), diesel, low-sulfur diesel, ultra-low-sulfur diesel, CARB diesel, other distillates, jet fuel, asphalt, petrochemicals, lubricants, and other refined petroleum products. We sell our refined petroleum products in both the wholesale rack and bulk markets, and approximately 7,400 outlets carry our brand names in the U.S., Canada, the U.K., and Ireland. Most of our logistics assets support our refining operations, and some of these assets are owned by Valero Energy Partners LP (VLP), a midstream master limited partnership majority owned by us. We also own 11 ethanol plants in the Mid-Continent region of the U.S. with a combined production capacity of approximately 1.45 billion gallons per year. We sell our ethanol in the wholesale bulk market, and some of our logistics assets support our ethanol operations.

AVAILABLE INFORMATION

Our website address is www.valero.com. Information on our website is not part of this report. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, and current reports on Form 8-K, and any amendments to those reports, filed with (or furnished to) the U.S. Securities and Exchange Commission (SEC) are available on our website (under "Investors") free of charge, soon after we file or furnish such material. In this same location, we also post our corporate governance guidelines, codes of ethics, and the charters of the committees of our board of directors. These documents are available in print to any stockholder that makes a written request to Valero Energy Corporation, Attn: Secretary, P.O. Box 696000, San Antonio, Texas 78269-6000.

SEGMENTS

Effective January 1, 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, we created a new reportable segment — VLP. The results of the VLP segment, which include the results of our majority-owned master limited partnership referred to by the same name, were transferred from the refining segment. The segment information included herein has been retrospectively adjusted for the segment changes described above.

As a result, we have three reportable segments as follows:

- *Refining segment* includes our refining operations, the associated marketing activities, and certain logistics assets, which are not owned by VLP, that support our refining operations;

- *Ethanol segment* includes our ethanol operations, the associated marketing activities, and logistics assets that support our ethanol operations; and

- *VLP segment* includes the results of VLP, which provides transportation and terminaling services to our refining segment.

Financial information about our segments is presented in Note 16 of Notes to Consolidated Financial Statements and is incorporated herein by reference.

VALERO'S OPERATIONS

REFINING

Refining Operations

As of December 31, 2017, our refining operations included 15 petroleum refineries in the U.S., Canada, and the U.K., with a combined total throughput capacity of approximately 3.1 million barrels per day (BPD). The following table presents the locations of these refineries and their approximate feedstock throughput capacities as of December 31, 2017.

Refinery	Location	Throughput Capacity (a) (BPD)
U.S. Gulf Coast:		
Port Arthur	Texas	395,000
Corpus Christi (b)	Texas	370,000
St. Charles	Louisiana	340,000
Texas City	Texas	260,000
Houston	Texas	235,000
Meraux	Louisiana	135,000
Three Rivers	Texas	100,000
		1,835,000
U.S. Mid-Continent:		
McKee	Texas	200,000
Memphis	Tennessee	195,000
Ardmore	Oklahoma	90,000
		485,000
North Atlantic:		
Pembroke	Wales, U.K.	270,000
Quebec City	Quebec, Canada	235,000
		505,000
U.S. West Coast:		
Benicia	California	170,000
Wilmington	California	135,000
		305,000
Total		**3,130,000**

(a) "Throughput capacity" represents estimated capacity for processing crude oil, inter-mediates, and other feedstocks. Total estimated crude oil capacity is approximately 2.6 million BPD.

(b) Represents the combined capacities of two refineries – the Corpus Christi East and Corpus Christi West Refineries.

Total Refining System

The following table presents the percentages of principal charges and yields (on a combined basis) for all of our refineries for 2017, during which period our total combined throughput volumes averaged approximately 2.9 million BPD.

Combined Total Refining System Charges and Yields

Charges:		
	sour crude oil	32%
	sweet crude oil	45%
	residual fuel oil	7%
	other feedstocks	5%
	blendstocks	11%
Yields:		
	gasolines and blendstocks	48%
	distillates	38%
	other products (primarily includes petrochemicals, gas oils, No. 6 fuel oil, petroleum coke, sulfur and asphalt)	14%

U.S. Gulf Coast

The following table presents the percentages of principal charges and yields (on a combined basis) for the eight refineries in the U.S. Gulf Coast region for 2017, during which period total throughput volumes averaged approximately 1.7 million BPD.

Combined U.S. Gulf Coast Region Charges and Yields

Charges:		
	sour crude oil	42%
	sweet crude oil	28%
	residual fuel oil	11%
	other feedstocks	7%
	blendstocks	12%
Yields:		
	gasolines and blendstocks	45%
	distillates	39%
	other products (primarily includes petrochemicals, gas oils, No. 6 fuel oil, petroleum coke, sulfur and asphalt)	16%

Port Arthur Refinery. Our Port Arthur Refinery is located on the Texas Gulf Coast approximately 90 miles east of Houston. The refinery processes heavy sour crude oils and other feedstocks into gasoline, diesel, and jet fuel. The refinery receives crude oil by rail, marine docks, and pipelines. Finished products are distributed into the Colonial, Explorer, and other pipelines and across the refinery docks into ships or barges.

Corpus Christi East and West Refineries. Our Corpus Christi East and West Refineries are located on the Texas Gulf Coast along the Corpus Christi Ship Channel. The East Refinery processes sour crude oil, and the West Refinery processes sweet crude oil, sour crude oil, and residual fuel oil. The feedstocks are delivered by tanker or barge via deepwater docking facilities along the Corpus Christi Ship Channel, and West Texas or South Texas crude oil is delivered via pipelines. The refineries' physical locations allow for the transfer of various feedstocks and blending components between them. The refineries produce gasoline, aromatics, jet fuel, diesel, and asphalt. Truck racks service local markets for gasoline, diesel, jet fuels, liquefied petroleum gases, and asphalt. These and other finished products are also distributed by ship or barge across docks and third-party pipelines.

St. Charles Refinery. Our St. Charles Refinery is located approximately 25 miles west of New Orleans along the Mississippi River. The refinery processes sour crude oils and other feedstocks into gasoline and diesel. The refinery receives crude oil over docks and has access to the Louisiana Offshore Oil Port. Finished products can be shipped over these docks or through our Parkway pipeline or the Bengal pipeline, which ultimately provide access to the Plantation or Colonial pipeline networks.

Texas City Refinery. Our Texas City Refinery is located southeast of Houston on the Texas City Ship Channel. The refinery processes crude oils into gasoline, diesel, and jet fuel. The refinery receives its feedstocks by pipeline and by ship or barge via deepwater docking facilities along the Texas City Ship Channel. The refinery uses ships and barges, as well as the Colonial, Explorer, and other pipelines for distribution of its products.

Houston Refinery. Our Houston Refinery is located on the Houston Ship Channel. It processes a mix of crude and intermediate oils into gasoline, jet fuel, and diesel. The refinery receives its feedstocks by tankers or barges at deepwater docking facilities along the Houston Ship Channel and by various interconnecting pipelines. The majority of its finished products are delivered to local, mid-continent U.S., and northeastern U.S. markets through various pipelines, including the Colonial and Explorer pipelines.

Meraux Refinery. Our Meraux Refinery is located approximately 15 miles southeast of New Orleans along the Mississippi River. The refinery processes sour and sweet crude oils into gasoline, diesel, jet fuel, and high sulfur fuel oil. The refinery receives crude oil at its dock and has access to the Louisiana Offshore Oil Port. Finished products can be shipped from the refinery’s dock or through the Colonial pipeline. The refinery is located about 40 miles from our St. Charles Refinery, allowing for integration of feedstocks and refined petroleum product blending.

Three Rivers Refinery. Our Three Rivers Refinery is located in South Texas between Corpus Christi and San Antonio. It processes sweet and sour crude oils into gasoline, distillates, and aromatics. The refinery has access to crude oil from sources outside the U.S. delivered to the Texas Gulf Coast at Corpus Christi, as well as crude oil from local sources through third-party pipelines and trucks. The refinery distributes its refined petroleum products primarily through third-party pipelines.

U.S. Mid-Continent

The following table presents the percentages of principal charges and yields (on a combined basis) for the three refineries in the U.S. Mid-Continent region for 2017, during which period total throughput volumes averaged approximately 457,000 BPD.

Combined U.S. Mid-Continent Region Charges and Yields

Charges:		
	sour crude oil	4%
	sweet crude oil	89%
	blendstocks	7%
Yields:		
	gasolines and blendstocks	54%
	distillates	36%
	other products (primarily includes petrochemicals, gas oils, No. 6 fuel oil, and asphalt)	10%

McKee Refinery. Our McKee Refinery is located in the Texas Panhandle. It processes primarily sweet crude oils into gasoline, diesel, jet fuels, and asphalt. The refinery has access to local and Permian Basin crude oil sources via third-party pipelines. The refinery distributes its products primarily via third-party pipelines to markets in Texas, New Mexico, Arizona, Colorado, and Oklahoma.

Memphis Refinery. Our Memphis Refinery is located in Tennessee along the Mississippi River. It processes primarily sweet crude oils. Most of its production is gasoline, diesel, and jet fuels. Crude oil supply is primarily from Cushing over the Diamond pipeline, which began operations in November 2017. Crude oil can be received, along with other feedstocks, via barge. Most of the refinery's products are distributed via truck rack and barges.

Ardmore Refinery. Our Ardmore Refinery is located in Oklahoma, approximately 100 miles south of Oklahoma City. It processes medium sour and sweet crude oils into gasoline, diesel, and asphalt. The refinery receives local crude oil and feedstock supply via third-party pipelines. Refined petroleum products are transported to market via rail, trucks, and the Magellan pipeline system.

North Atlantic

The following table presents the percentages of principal charges and yields (on a combined basis) for the two refineries in the North Atlantic region for 2017, during which period total throughput volumes averaged approximately 491,000 BPD.

Combined North Atlantic Region Charges and Yields

Charges:		
	sour crude oil	1%
	sweet crude oil	84%
	residual fuel oil	5%
	blendstocks	10%
Yields:		
	gasolines and blendstocks	45%
	distillates	42%
	other products (primarily includes petrochemicals, gas oils, and No. 6 fuel oil)	13%

Pembroke Refinery. Our Pembroke Refinery is located in the County of Pembrokeshire in southwest Wales, U.K. The refinery processes primarily sweet crude oils into gasoline, diesel, jet fuel, heating oil, and low-sulfur fuel oil. The refinery receives all of its feedstocks and delivers the majority of its products by ship and barge via deepwater docking facilities along the Milford Haven Waterway, with its remaining products being delivered by our Mainline pipeline system and by trucks.

Quebec City Refinery. Our Quebec City Refinery is located in Lévis, Canada (near Quebec City). It processes sweet crude oils into gasoline, diesel, jet fuel, heating oil, and low-sulfur fuel oil. The refinery receives crude oil by ship at its deepwater dock on the St. Lawrence River or by pipeline or ship from western Canada. The refinery transports its products through our pipeline from Quebec City to our terminal in Montreal and to various other terminals throughout eastern Canada by rail, ships, trucks, and third-party pipelines.

U.S. West Coast

The following table presents the percentages of principal charges and yields (on a combined basis) for the two refineries in the U.S. West Coast region for 2017, during which period total throughput volumes averaged approximately 257,000 BPD.

Combined U.S. West Coast Region Charges and Yields

Charges:		
	sour crude oil	65%
	sweet crude oil	7%
	other feedstocks	13%
	blendstocks	15%
Yields:		
	gasolines and blendstocks	59%
	distillates	25%
	other products (primarily includes gas oil, No. 6 fuel oil, petroleum coke, sulfur and asphalt)	16%

Benicia Refinery. Our Benicia Refinery is located northeast of San Francisco on the Carquinez Straits of San Francisco Bay. It processes sour crude oils into gasoline, diesel, jet fuel, and asphalt. Gasoline production is primarily California Reformulated Blendstock Gasoline for Oxygenate Blending (CARBOB), which meets California Air Resource Board (CARB) specifications when blended with ethanol. The refinery receives crude oil feedstocks via a marine dock and crude oil pipelines connected to a southern California crude oil delivery system. Most of the refinery's products are distributed via pipeline and truck rack into northern California markets.

Wilmington Refinery. Our Wilmington Refinery is located near Los Angeles, California. The refinery processes a blend of heavy and high-sulfur crude oils. The refinery produces CARBOB gasoline, diesel, CARB diesel, jet fuel, and asphalt. The refinery is connected by pipeline to marine terminals and associated dock facilities that can move and store crude oil and other feedstocks. Refined petroleum products are distributed via pipeline systems to various third-party terminals in southern California, Nevada, and Arizona.

Feedstock Supply

Our crude oil feedstocks are purchased through a combination of term and spot contracts. Our term supply agreements are at market-related prices and are purchased directly or indirectly from various national oil companies as well as international and U.S. oil companies. The contracts generally permit the parties to amend the contracts (or terminate them), effective as of the next scheduled renewal date, by giving the other party proper notice within a prescribed period of time (*e.g.*, 60 days, 6 months) before expiration of the current term. The majority of the crude oil purchased under our term contracts is purchased at the producer's official stated price (*i.e.*, the "market" price established by the seller for all purchasers) and not at a negotiated price specific to us.

Marketing

Overview

We sell refined petroleum products in both the wholesale rack and bulk markets. These sales include refined petroleum products that are manufactured in our refining operations, as well as refined petroleum products purchased or received on exchange from third parties. Most of our refineries have access to marine transportation facilities and interconnect with common-carrier pipeline systems, allowing us to sell products in the U.S., Canada, the U.K., and other countries.

Wholesale Rack Sales

We sell our gasoline and distillate products, as well as other products, such as asphalt, lube oils, and natural gas liquids (NGLs), on a wholesale basis through an extensive rack marketing network. The principal purchasers of our refined petroleum products from terminal truck racks are wholesalers, distributors, retailers, and truck-delivered end users throughout the U.S., Canada, the U.K., and Ireland.

The majority of our rack volume is sold through unbranded channels. The remainder is sold to distributors and dealers that are members of the Valero-brand family that operate 5,631 branded sites in the U.S., 923 branded sites in the U.K. and Ireland, and 839 branded sites in Canada as of December 31, 2017. These sites are independently owned and are supplied by us under multi-year contracts. For branded sites, products are sold under the Valero®, Beacon®, Diamond Shamrock®, and Shamrock® brands in the U.S., the Texaco® brand in the U.K. and Ireland, and the Ultramar® brand in Canada.

Bulk Sales

We also sell our gasoline and distillate products, as well as other products, such as asphalt, petrochemicals, and NGLs, through bulk sales channels in the U.S. and international markets. Our bulk sales are made to various oil companies, traders, and bulk end-users, such as railroads, airlines, and utilities. Our bulk sales are transported primarily by pipeline, barges, and tankers to major tank farms and trading hubs.

We also enter into refined petroleum product exchange and purchase agreements. These agreements help minimize transportation costs, optimize refinery utilization, balance refined petroleum product availability, broaden geographic distribution, and provide access to markets not connected to our refined-product pipeline systems. Exchange agreements provide for the delivery of refined petroleum products by us to unaffiliated companies at our and third-parties' terminals in exchange for delivery of a similar amount of refined petroleum products to us by these unaffiliated companies at specified locations. Purchase agreements involve our purchase of refined petroleum products from third parties with delivery occurring at specified locations.

Logistics

We own logistics assets (crude oil pipelines, refined petroleum product pipelines, terminals, tanks, marine docks, truck rack bays, and other assets) that support our refining operations, and these assets are not owned by VLP. See discussion of the VLP segment on page 11.

ETHANOL

We own 11 ethanol plants with a combined ethanol production capacity of 1.45 billion gallons per year. Our ethanol plants are dry mill facilities[(a)] that process corn to produce ethanol, distillers grains, and corn oil[(b)]. We source our corn supply from local farmers and commercial elevators. Our facilities receive corn primarily by rail and truck. We publish on our website a corn bid for local farmers and cooperative dealers to facilitate corn supply transactions.

We sell our ethanol primarily to refiners and gasoline blenders under term and spot contracts in bulk markets such as New York, Chicago, the U.S. Gulf Coast, Florida, and the U.S. West Coast. We ship our dry distillers grains (DDGs) by truck or rail primarily to animal feed customers in the U.S. and Mexico. We also sell modified distillers grains locally at our plant sites, and corn oil by truck or rail. We distribute our ethanol through logistics assets, which include railcars owned by us.

The following table presents the locations of our ethanol plants, their approximate annual production capacities for ethanol (in millions of gallons) and DDGs (in tons), and their approximate corn processing capacities (in millions of bushels).

State	City	Ethanol Production Capacity	Production of DDGs	Corn Processed
Indiana	Linden	135	355,000	47
	Mount Vernon	100	263,000	35
Iowa	Albert City	135	355,000	47
	Charles City	140	368,000	49
	Fort Dodge	140	368,000	49
	Hartley	140	368,000	49
Minnesota	Welcome	140	368,000	49
Nebraska	Albion	135	355,000	47
Ohio	Bloomingburg	135	355,000	47
South Dakota	Aurora	140	368,000	49
Wisconsin	Jefferson	110	352,000	41
Total		1,450	3,875,000	509

The combined production of ethanol from our plants averaged 4.0 million gallons per day for 2017.

(a) Ethanol is commercially produced using either the wet mill or dry mill process. Wet milling involves separating the grain kernel into its component parts (germ, fiber, protein, and starch) prior to fermentation. In the dry mill process, the entire grain kernel is ground into flour. The starch in the flour is converted to ethanol during the fermentation process, creating carbon dioxide and distillers grains.

(b) During fermentation, nearly all of the starch in the grain is converted into ethanol and carbon dioxide, while the remaining nutrients (proteins, fats, minerals, and vitamins) are concentrated to yield corn oil, modified distillers grains, or, after further drying, dried distillers grains. Distillers grains generally are an economical partial replacement for corn and soybeans in feeds for cattle, swine, and poultry. Corn oil is produced as fuel grade and feed grade (not for human consumption), and is sold primarily as a feedstock for biodiesel or renewable diesel production with a smaller percentage sold into animal feed markets.

VLP

VLP is a publicly traded master limited partnership formed by us in July 2013 to own, operate, develop, and acquire crude oil and refined petroleum products pipelines, terminals, and other transportation and logistics assets. VLP's assets include crude oil and refined petroleum products pipeline and terminal systems in the U.S. Gulf Coast and U.S. Mid-Continent regions that provide transportation and terminaling services to our refining segment and are integral to the operations of our Ardmore, Corpus Christi, Houston, McKee, Memphis, Meraux, Port Arthur, St. Charles, and Three Rivers Refineries. VLP's common units, representing limited partner interests, are traded on the NYSE under the symbol "VLP." VLP is discussed more fully in Note 11 of Notes to Consolidated Financial Statements.

The following table summarizes information with respect to VLP's pipelines:

Pipeline	Diameter (inches)	Length (miles)	Throughput Capacity (thousand BPD)	Commodity	Associated Valero Refinery	Significant Third-party System Connections
Ardmore logistics system						
Hewitt segment of Red River crude oil pipeline	16	138	60(a)	crude oil	Ardmore	Plains Red River, Plains Cushing
Wynnewood refined products pipeline	12	30	90	refined petroleum products	Ardmore	Magellan Central
McKee logistics system						
McKee crude system	multiple segments	145	72	crude oil	McKee	—
McKee products system						
McKee to El Paso pipeline	10	408	21(b)	refined petroleum products	McKee	—
SFPP pipeline connection	16, 8	12	33(c)	refined petroleum products	McKee	Kinder Morgan SFPP System
Memphis logistics system(d)						
Collierville crude system						
Collierville pipeline	10-20	52	210	crude oil	Memphis	Capline; Diamond (e)
Memphis products system						
Memphis Airport pipeline system	6	11	20	jet fuel	Memphis	Memphis International Airport
Shorthorn pipeline system	14, 12	9	120	refined petroleum products	Memphis	Exxon Memphis
Port Arthur logistics system						
Lucas crude system						
Lucas pipeline	30	12	400	crude oil	Port Arthur	Sunoco Logistics Nederland; Enterprise Beaumont; Cameron Highway; TransCanada Cushing MarketLink; Seaway
Nederland pipeline	32	5	600	crude oil	Port Arthur	Sunoco Logistics Nederland
Port Arthur products system						
12-10 pipeline	12, 10	13	60	refined petroleum products	Port Arthur	Sunoco Logistics MagTex; Enterprise TE Products, Enterprise Beaumont
20-inch diesel pipeline	20	3	216	diesel	Port Arthur	Explorer; Colonial
20-inch gasoline pipeline	20	4	144	gasoline	Port Arthur	Explorer; Colonial
St. Charles logistics system						
Parkway pipeline	16	140	110	refined petroleum products	St. Charles	Plantation; Colonial
Three Rivers logistics system						
Three Rivers crude system	12	3	110	crude oil	Three Rivers	Harvest Arrowhead; Plains Gardendale; EOG Eagle Ford West

(a) Capacity shown represents VLP's 40 percent undivided interest in the pipeline segment. Total capacity for the pipeline segment is 150,000 BPD.
(b) Capacity shown represents VLP's 33⅓ percent undivided interest in the pipeline. Total capacity for the pipeline is 63,000 BPD.
(c) Capacity shown represents VLP's 33⅓ percent undivided interest in the pipeline connection. Total capacity for the pipeline connection is 98,400 BPD.
(d) Portions of VLP's Memphis logistics system pipelines are owned by Memphis Light, Gas and Water (MLGW), but they are operated and maintained exclusively by VLP under long-term arrangements with MLGW.
(e) The Diamond pipeline is owned 50 percent by Valero and 50 percent by Plains All American Pipeline, L.P.

The following table summarizes information with respect to VLP's terminals:

Terminal	Tank Storage Capacity (thousands of barrels)	Throughput Capacity (thousand BPD)	Commodity	Associated Valero Refinery	Significant Third-party System Connections
Ardmore logistics system					
Hewitt Station tanks	300	—	crude oil	Ardmore	Plains Red River
Wynnewood terminal	180	—	refined petroleum products	Ardmore	Magellan Central
Corpus Christi logistics system					
Corpus Christi East terminal	6,241	—	crude oil and refined petroleum products	Corpus Christi East	Eagle Ford Pipeline LLC; NuStar North Beach terminal, Eagle Ford pipelines & South Texas pipeline network
Corpus Christi West terminal	3,835	—	crude oil and refined petroleum products	Corpus Christi West	(same as Corpus Christi East terminal)
Houston logistics system					
Houston terminal	3,642	—	crude oil and refined petroleum products	Houston	HFOTCO; Magellan crude; Seaway; Kinder Morgan Pasadena & Galena Park; Magellan East Houston & Galena Park
McKee logistics system					
McKee crude system					
Various terminals	240	—	crude oil	McKee	—
McKee products system					
El Paso terminal	166 [(a)]	—	refined petroleum products	McKee	Kinder Morgan SFPP System
El Paso terminal truck rack	—	10 [(b)]	refined petroleum products	McKee	—
McKee terminal	4,400	—	crude oil and refined petroleum products	McKee	NuStar (several); NuStar/Phillips Denver
Memphis logistics system					
Collierville crude system					
Collierville terminal	975	—	crude oil	Memphis	Capline
St. James crude tank	330	—	crude oil	Memphis	Capline
Memphis products system					
Memphis truck rack	8	110	refined petroleum products	Memphis	—
West Memphis terminal	1,080	—	refined petroleum products	Memphis	Exxon Memphis; Enterprise TE Products
West Memphis terminal dock	—	4 [(c)]	refined petroleum products	Memphis	—
West Memphis terminal truck rack	—	50	refined petroleum products	Memphis	—
Meraux logistics system					
Meraux terminal	3,900	—	crude oil and refined petroleum products	Meraux	LOOP; CAM; Plantation; Colonial

See footnotes on page 14.

Terminal	Tank Storage Capacity (thousands of barrels)	Throughput Capacity (thousand BPD)	Commodity	Associated Valero Refinery	Significant Third-party System Connections
Port Arthur logistics system					
Lucas crude system					
Lucas terminal	1,915	—	crude oil	Port Arthur	Sunoco Logistics Nederland; Enterprise Beaumont; Cameron Highway; TransCanada Cushing MarketLink; Seaway
Seaway connection	—	750	crude oil	Port Arthur	Seaway
TransCanada connection	—	400	crude oil	Port Arthur	TransCanada Cushing MarketLink
Port Arthur products system					
El Vista terminal	1,210	—	gasoline	Port Arthur	Explorer; Colonial
PAPS terminal	1,144	—	diesel	Port Arthur	Explorer; Colonial
Port Arthur terminal	8,500	—	crude oil and refined petroleum products	Port Arthur	Sunoco Logistics Nederland; Explorer; Colonial; Sunoco Logistics MagTex; Cameron Highway; TransCanada Cushing MarketLink; Enterprise Beaumont
St. Charles logistics system					
St. Charles terminal	10,004	—	crude oil and refined petroleum products	St. Charles	LOOP; CAM; Plantation; Colonial
Three Rivers logistics system					
Three Rivers terminal	2,250	—	crude oil and refined petroleum products	Three Rivers	NuStar South Texas; Harvest Arrowhead; Plains Gardendale; EOG Eagle Ford West

(a) Capacity shown represents VLP’s 33⅓ percent undivided interest in the terminal. Total storage capacity is 499,000 barrels.
(b) Capacity shown represents VLP’s 33⅓ percent undivided interest in the truck rack. Total capacity is 30,000 BPD.
(c) Dock throughput is reflected in thousands of barrels per hour.

ENVIRONMENTAL MATTERS

We incorporate by reference into this Item the environmental disclosures contained in the following sections of this report:

- Item 1A, "Risk Factors"—*Compliance with and changes in environmental laws, including proposed climate change laws and regulations, could adversely affect our performance*;
- Item 1A, "Risk Factors"—*Compliance with the U.S. Environmental Protection Agency Renewable Fuel Standard could adversely affect our performance;*
- Item 1A, "Risk Factors"—*We may incur additional costs as a result of our use of rail cars for the transportation of crude oil and the products that we manufacture*;
- Item 3, "Legal Proceedings" under the caption "Environmental Enforcement Matters," and;
- Item 8, "Financial Statements and Supplementary Data" in Note 7 of Notes to Consolidated Financial Statements and Note 9 of Notes to Consolidated Financial Statements under the caption "*Environmental Matters.*"

Capital Expenditures Attributable to Compliance with Environmental Regulations. In 2017, our capital expenditures attributable to compliance with environmental regulations were $145 million, and they are currently estimated to be $290 million for 2018 and $123 million for 2019. The estimates for 2018 and 2019 do not include amounts related to capital investments at our facilities that management has deemed to be strategic investments. These amounts could materially change as a result of governmental and regulatory actions.

PROPERTIES

Our principal properties are described above under the caption "Valero's Operations," and that information is incorporated herein by reference. We believe that our properties and facilities are generally adequate for our operations and that our facilities are maintained in a good state of repair. As of December 31, 2017, we were the lessee under a number of cancelable and noncancelable leases for certain properties. Our leases are discussed more fully in Notes 8 and 9 of Notes to Consolidated Financial Statements. Financial information about our properties is presented in Note 5 of Notes to Consolidated Financial Statements and is incorporated herein by reference.

Our patents relating to our refining operations are not material to us as a whole. The trademarks and tradenames under which we conduct our branded wholesale business — Valero®, Diamond Shamrock®, Shamrock®, Ultramar®, Beacon®, and Texaco®— and other trademarks employed in the marketing of petroleum products are integral to our wholesale rack marketing operations.

ITEM 1A. RISK FACTORS

You should carefully consider the following risk factors in addition to the other information included in this report. Each of these risk factors could adversely affect our business, operating results, and/or financial condition, as well as adversely affect the value of an investment in our common stock.

Our financial results are affected by volatile refining margins, which are dependent upon factors beyond our control, including the price of crude oil and the market price at which we can sell refined petroleum products.

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

Some of these factors can vary by region and may change quickly, adding to market volatility, while others may have longer-term effects. The longer-term effects of these and other factors on refining and marketing margins are uncertain. We do not produce crude oil and must purchase all of the crude oil we refine. We may purchase our crude oil and other refinery feedstocks long before we refine them and sell the refined petroleum products. Price level changes during the period between purchasing feedstocks and selling the refined petroleum products from these feedstocks could have a significant effect on our financial results. A decline in market prices may negatively impact the carrying value of our inventories.

Economic turmoil and political unrest or hostilities, including the threat of future terrorist attacks, could affect the economies of the U.S. and other countries. Lower levels of economic activity could result in declines in energy consumption, including declines in the demand for and consumption of our refined petroleum products, which could cause our revenues and margins to decline and limit our future growth prospects.

Refining margins are also significantly impacted by additional refinery conversion capacity through the expansion of existing refineries or the construction of new refineries. Worldwide refining capacity expansions may result in refining production capability exceeding refined petroleum product demand, which would have an adverse effect on refining margins.

A significant portion of our profitability is derived from the ability to purchase and process crude oil feedstocks that historically have been cheaper than benchmark crude oils, such as Louisiana Light Sweet (LLS) and Brent crude oils. These crude oil feedstock differentials vary significantly depending on overall economic conditions and trends and conditions within the markets for crude oil and refined petroleum products, and they could decline in the future, which would have a negative impact on our results of operations.

Compliance with and changes in environmental laws, including proposed climate change laws and regulations, could adversely affect our performance.

The principal environmental risks associated with our operations are emissions into the air and releases into the soil, surface water, or groundwater. Our operations are subject to extensive environmental laws and regulations, including those relating to the discharge of materials into the environment, waste management, pollution prevention measures, greenhouse gas (GHG) emissions, and characteristics and composition of fuels, including gasoline and diesel. Certain of these laws and regulations could impose obligations to conduct assessment or remediation efforts at our facilities as well as at formerly owned properties or third-party sites where we have taken wastes for disposal or where our wastes have migrated. Environmental laws and regulations also may impose liability on us for the conduct of third parties, or for actions that complied with applicable requirements when taken, regardless of negligence or fault. If we violate or fail to comply with these laws and regulations, we could be fined or otherwise sanctioned.

Because environmental laws and regulations are becoming more stringent and new environmental laws and regulations are continuously being enacted or proposed, such as those relating to GHG emissions and climate change, the level of expenditures required for environmental matters could increase in the future. Current and future legislative action and regulatory initiatives could result in changes to operating permits, material changes in operations, increased capital expenditures and operating costs, increased costs of the goods we sell, and decreased demand for our products that cannot be assessed with certainty at this time. We may be required to make expenditures to modify operations, discontinue use of certain process units, or install pollution control equipment that could materially and adversely affect our business, financial condition, results of operations, and liquidity.

For example, the U.S. Environmental Protection Agency (EPA) recently adopted the Residual Risk and Technology Review Rule (RTR) adding new standards for air toxic emissions, among other requirements. Emerging rules and permitting requirements implementing these revised standards may require us to install more stringent controls at our facilities, which may result in increased capital expenditures. Governmental regulations regarding GHG emissions and low carbon fuel standards could result in increased compliance costs, additional operating restrictions or permitting delays for our business, and an increase in the cost of, and reduction in demand for, the products we produce, which could have a material adverse effect on our financial position, results of operations, and liquidity.

In addition, in 2015, the U.S., Canada, and the U.K. participated in the United Nations Conference on Climate Change, which led to the creation of the Paris Agreement. The Paris Agreement, which was signed by the U.S. in April 2016, requires countries to review and "represent a progression" in their intended nationally determined contributions (which set GHG emission reduction goals) every five years beginning in 2020. While the current U.S. administration announced its intent to withdraw from the Paris Agreement in June 2017, there are no guarantees that it will not be implemented in the U.S., or in part by U.S. states or local governments. Restrictions on emissions of methane or carbon dioxide that have been or may be imposed in various U.S. states or at the U.S. federal level or in other countries could adversely affect the oil and gas industry.

Severe weather events may have an adverse effect on our assets and operations.

Some members within the scientific community believe that the increasing concentrations of greenhouse gas emissions in the Earth's atmosphere, among other reasons, may produce climate changes that have significant physical effects, such as increased frequency and severity of storms, droughts and floods and other climatic events. If any such climatic events were to occur, they could have an adverse effect on our assets and operations.

Compliance with the U.S. Environmental Protection Agency Renewable Fuel Standard could adversely affect our performance.

The U.S. EPA has implemented a Renewable Fuel Standard (RFS) pursuant to the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007. The RFS program sets annual quotas for the quantity of renewable fuels (such as ethanol) that must be blended into transportation fuels consumed in the U.S. A Renewable Identification Number (RIN) is assigned to each gallon of renewable fuel produced in or imported into the U.S. As a producer of petroleum-based transportation fuels, we are obligated to blend renewable fuels into the products we produce at a rate that is at least commensurate to the U.S. EPA's quota and, to the extent we do not, we must purchase RINs in the open market to satisfy our obligation under the RFS program.

We are exposed to the volatility in the market price of RINs. We cannot predict the future prices of RINs. RINs prices are dependent upon a variety of factors, including U.S. EPA regulations, the availability of RINs for purchase, and levels of transportation fuels produced, which can vary significantly from quarter to quarter. If sufficient RINs are unavailable for purchase or if we have to pay a significantly higher price for RINs, or if we are otherwise unable to meet the U.S. EPA's RFS mandates, our results of operations and cash flows could be adversely affected.

Disruption of our ability to obtain crude oil could adversely affect our operations.

A significant portion of our feedstock requirements is satisfied through supplies originating in the Middle East, Africa, Asia, North America, and South America. We are, therefore, subject to the political, geographic, and economic risks attendant to doing business with suppliers located in, and supplies originating from, these areas. If one or more of our supply contracts were terminated, or if political events disrupt our traditional crude oil supply, we believe that adequate alternative supplies of crude oil would be available, but it is possible that we would be unable to find alternative sources of supply. If we are unable to obtain adequate crude oil volumes or are able to obtain such volumes only at unfavorable prices, our results of operations could be materially adversely affected, including reduced sales volumes of refined petroleum products or reduced margins as a result of higher crude oil costs.

In addition, the U.S. government can prevent or restrict us from doing business in or with other countries. These restrictions, and those of other governments, could limit our ability to gain access to business opportunities in various countries. Actions by both the U.S. and other countries have affected our operations in the past and will continue to do so in the future.

Any attempt by the U.S. government to withdraw from or materially modify existing international trade agreements could adversely affect our business, financial condition and results of operations.

The current U.S. administration has questioned certain existing and proposed trade agreements, such as the North American Free Trade Agreement, and has withdrawn the U.S. from others such as the Trans-Pacific Partnership. The current U.S. administration has also raised the possibility of greater restrictions on trade generally, and significant increases on tariffs on goods imported into the U.S.

Changes in U.S. social, political, regulatory and economic conditions or in laws and policies governing foreign trade, manufacturing, development and investment could adversely affect our business. For example, the imposition of tariffs or other trade barriers with other countries could affect our ability to obtain feedstocks from international sources, increase our costs and reduce the competitiveness of our products.

While there is currently a lack of certainty around the likelihood, timing, and details of any such policies and reforms, if the current U.S. administration takes action to withdraw from, or materially modify, existing international trade agreements, our business, financial condition and results of operations could be adversely affected.

We are subject to interruptions and increased costs as a result of our reliance on third-party transportation of crude oil and the products that we manufacture.

We generally use the services of third parties to transport feedstocks to our facilities and to transport the products we manufacture to market. If we experience prolonged interruptions of supply or increases in costs to deliver our products to market, or if the ability of the pipelines, vessels, or railroads to transport feedstocks or products is disrupted because of weather events, accidents, derailment, collision, fire, explosion, governmental regulations, or third-party actions, it could have a material adverse effect on our financial position, results of operations, and liquidity.

We may incur additional costs as a result of our use of rail cars for the transportation of crude oil and the products that we manufacture.

We currently use rail cars for the transportation of some feedstocks to certain of our facilities and for the transportation of some of the products we manufacture to their markets. We own and lease rail cars for our operations. Rail transportation is subject to a variety of federal, state, and local regulations. New laws and regulations, and changes in existing laws and regulations, are frequently enacted or proposed, and could result in increased expenditures for compliance, either directly through costs for our owned and leased rail assets, or as passed along to us by rail carriers and operators. For example, in May 2014, the U.S. Department of Transportation (DOT) issued an emergency order requiring rail carriers to provide certain notifications to state agencies along routes used by trains over a certain length carrying crude oil. In addition, in November 2014, the Federal Railroad Administration (FRA) issued a final rule regarding safety training standards under the Rail Safety Improvement Act of 2008. The rule required each railroad or contractor to develop and submit a training program to perform regular oversight and annual written reviews. In May 2015, the Pipeline and Hazardous Materials Safety Administration (PHMSA), in coordination with the FRA, issued new final rules for enhanced tank car standards and operational controls for high-hazard flammable trains. In August 2016, PHMSA adopted a final rule expanding the requirements and mandating additional controls for enhanced tank cars, as required by the Fixing America's Surface Transportation (FAST) Act of 2015. While some recent actions—including (1) a December 2017 statement that PHMSA intends to initiate rulemaking to rescind portions of its May 2015 rule; and (2) an April 2017 final rule from FRA that delays certain training-program requirements—have provided some regulatory relief, the general trend has been toward greater regulation. We do not believe recently adopted rules will have a material impact on our financial position, results of operations, and liquidity, although further changes in law, regulations or industry standards could require us to incur additional costs to the extent they are applicable to us.

Competitors that produce their own supply of feedstocks, own their own retail sites, have greater financial resources, or provide alternative energy sources may have a competitive advantage.

The refining and marketing industry is highly competitive with respect to both feedstock supply and refined petroleum product markets. We compete with many companies for available supplies of crude oil and other feedstocks and for sites for our refined petroleum products. We do not produce any of our crude oil feedstocks and, following the separation of our retail business in 2013, we do not have a company-owned retail network. Many of our competitors, however, obtain a significant portion of their feedstocks from company-owned production and some have extensive retail sites. Such competitors are at times able to offset losses from refining operations with profits from producing or retailing operations, and may be better positioned to withstand periods of depressed refining margins or feedstock shortages.

Some of our competitors also have materially greater financial and other resources than we have. Such competitors have a greater ability to bear the economic risks inherent in all phases of our industry. 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.

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

Our ability to obtain credit and capital depends in large measure on capital markets and liquidity factors that we do not control. Our ability to access credit and capital markets may be restricted at a time when we would like, or need, to access those markets, which could have an impact on our flexibility to react to changing economic and business conditions. In addition, the cost and availability of debt and equity financing may be adversely impacted by unstable or illiquid market conditions. Protracted uncertainty and illiquidity in these markets also could have an adverse impact on our lenders, commodity hedging counterparties, or our customers, causing them to fail to meet their obligations to us. In addition, decreased returns on pension fund assets may also materially increase our pension funding requirements.

Our access to credit and capital markets also depends on the credit ratings assigned to our debt by independent credit rating agencies. We currently maintain investment-grade ratings by Standard & Poor's Ratings Services, Moody's Investors Service, and Fitch Ratings on our senior unsecured debt. Ratings from credit agencies are not recommendations to buy, sell, or hold our securities. Each rating should be evaluated independently of any other rating. We cannot provide assurance that any of our current ratings will remain in effect for any given period of time or that a rating will not be lowered or withdrawn entirely by a rating agency if, in its judgment, circumstances so warrant. Specifically, if ratings agencies were to downgrade our long-term rating, particularly below investment grade, our borrowing costs would increase, which could adversely affect our ability to attract potential investors and our funding sources could decrease. In addition, we may not be able to obtain favorable credit terms from our suppliers or they may require us to provide collateral, letters of credit, or other forms of security, which would increase our operating costs. As a result, a downgrade below investment grade in our credit ratings could have a material adverse impact on our financial position, results of operations, and liquidity.

From time to time, our cash needs may exceed our internally generated cash flow, and our business could be materially and adversely affected if we were unable to obtain necessary funds from financing activities. From time to time, we may need to supplement our cash generated from operations with proceeds from financing activities. We have existing revolving credit facilities, committed letter of credit facilities, and an accounts receivable sales facility to provide us with available financing to meet our ongoing cash needs. In addition, we rely on the counterparties to our derivative instruments to fund their obligations under such arrangements. Uncertainty and illiquidity in financial markets may materially impact the ability of the participating financial institutions and other counterparties to fund their commitments to us under our various financing facilities or our derivative instruments, which could have a material adverse effect on our financial position, results of operations, and liquidity.

A significant interruption in one or more of our refineries could adversely affect our business.

Our refineries are our principal operating assets. As a result, our operations could be subject to significant interruption if one or more of our refineries were to experience a major accident or mechanical failure, be damaged by severe weather or other natural or man-made disaster, such as an act of terrorism, or otherwise be forced to shut down. 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. Significant interruptions in our refining system could also lead to increased volatility in prices for crude oil feedstocks and refined petroleum products, and could increase instability in the financial and insurance markets, making it more difficult for us to access capital and to obtain insurance coverage that we consider adequate.

A significant interruption related to our information technology systems could adversely affect our business.

Our information technology systems and network infrastructure may be subject to unauthorized access or attack, which could result in a loss of intellectual property, proprietary information or employee, customer or vendor data; public disclosure of sensitive information; increased costs to prevent, respond to or mitigate cybersecurity events; systems interruption; or the disruption of our business operations. A breach could also originate from, or compromise, our customers' and vendors' or other third-party networks outside of our control. A breach may also result in legal claims or proceedings against us by our shareholders, employees, customers and vendors. There can be no assurance that our infrastructure protection technologies and disaster recovery plans can prevent a technology systems breach or systems failure, which could have a material adverse effect on our financial position or results of operations. Furthermore, the continuing and evolving threat of cyber-attacks has resulted in increased regulatory focus on prevention. To the extent we face increased regulatory requirements, we may be required to expend significant additional resources to meet such requirements.

Our business may be negatively affected by work stoppages, slowdowns or strikes by our employees, as well as new labor legislation issued by regulators.

Workers at some of our refineries are covered by collective bargaining agreements. To the extent we are in negotiations for labor agreements expiring in the future, there is no assurance an agreement will be reached without a strike, work stoppage, or other labor action. Any prolonged strike, work stoppage, or other labor action could have an adverse effect on our financial condition or results of operations. In addition, future federal or state labor legislation could result in labor shortages and higher costs, especially during critical maintenance periods.

We are subject to operational risks and our insurance may not be sufficient to cover all potential losses arising from operating hazards. Failure by one or more insurers to honor its coverage commitments for an insured event could materially and adversely affect our financial position, results of operations, and liquidity.

Our operations are subject to various hazards common to the industry, including explosions, fires, toxic emissions, maritime hazards, and natural catastrophes. As protection against these hazards, we maintain insurance coverage against some, but not all, potential losses and liabilities. We may not be able to maintain or obtain insurance of the type and amount we desire at reasonable rates. As a result of market conditions, premiums and deductibles for certain of our insurance policies could increase substantially. In some instances, certain insurance could become unavailable or available only for reduced amounts of coverage. For example, coverage for hurricane damage is very limited, and coverage for terrorism risks includes very broad exclusions. If we were to incur a significant liability for which we were not fully insured, it could have a material adverse effect on our financial position, results of operations, and liquidity.

Our insurance program includes a number of insurance carriers. Significant disruptions in financial markets could lead to a deterioration in the financial condition of many financial institutions, including insurance companies. We can make no assurances that we will be able to obtain the full amount of our insurance coverage for insured events.

Large capital projects can take many years to complete, and market conditions could deteriorate over time, negatively impacting project returns.

We may engage in capital projects based on the forecasted project economics and level of return on the capital to be employed in the project. Large-scale projects take many years to complete, and market conditions can change from our forecast. As a result, we may be unable to fully realize our expected returns, which could negatively impact our financial condition, results of operations, and cash flows.

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

We are subject to extensive tax liabilities imposed by multiple jurisdictions, including income taxes, indirect taxes (excise/duty, sales/use, gross receipts, and value-added taxes), payroll taxes, franchise taxes, withholding taxes, and ad valorem taxes. New tax laws and regulations and changes in existing tax laws and regulations are continuously being enacted or proposed that could result in increased expenditures for tax liabilities in the future. Many of these liabilities are subject to periodic audits by the respective taxing authority. Subsequent changes to our tax liabilities as a result of these audits may subject us to interest and penalties.

On December 22, 2017, tax legislation commonly known as the Tax Cuts and Jobs Act of 2017 (Tax Reform) was enacted. Among other things, Tax Reform reduces the U.S. corporate income tax rate from 35 percent to 21 percent (beginning in 2018) and implements a new system of taxation for non-U.S. earnings, including by imposing a one-time tax on the deemed repatriation of undistributed earnings of non-U.S. subsidiaries. Beginning in 2018, Tax Reform also generally will (i) limit our annual deductions for interest expense to no more than 30 percent of our "adjusted taxable income" (plus 100 percent of our business interest income) for the year and (ii) permit us to offset only 80 percent (rather than 100 percent) of our taxable income with any net operating losses we generate after 2017. While we are currently evaluating the effects of Tax Reform, including the one-time deemed repatriation tax and the re-measurement of our deferred tax assets and liabilities, we do not expect that the provisions of Tax Reform, taken as a whole, will have any adverse impact on our cash tax liabilities, results of operations, or financial condition. In the absence of guidance on various uncertainties and ambiguities in the application of certain provisions of Tax Reform, we will use what we believe are reasonable interpretations and assumptions in applying Tax Reform, but it is possible that the Internal Revenue Service (IRS) could issue subsequent guidance or take positions on audit that differ from our prior interpretations and assumptions, which could adversely impact our cash tax liabilities, results of operations, and financial condition.

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

We currently use commodity derivative instruments, and we expect to continue their use in the future. If the instruments we use to hedge our exposure to various types of risk are not effective, we may incur losses. In addition, we may be required to incur additional costs in connection with future regulation of derivative instruments to the extent it is applicable to us.

One of our subsidiaries acts as the general partner of a publicly traded master limited partnership, VLP, which may involve a greater exposure to legal liability than our historic business operations.

One of our subsidiaries acts as the general partner of VLP, a publicly traded master limited partnership. Our control of the general partner of VLP may increase the possibility of claims of breach of fiduciary duties, including claims of conflicts of interest, related to VLP. Liability resulting from such claims could have a material adverse effect on our financial position, results of operations, and liquidity.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 3. LEGAL PROCEEDINGS

LITIGATION

We incorporate by reference into this Item our disclosures made in Part II, Item 8 of this report included in Note 9 of Notes to Consolidated Financial Statements under the caption “*Litigation Matters.*”

ENVIRONMENTAL ENFORCEMENT MATTERS

While it is not possible to predict the outcome of the following environmental proceedings, if any one or more of them were decided against us, we believe that there would be no material effect on our financial position, results of operations, or liquidity. We are reporting these proceedings to comply with SEC regulations, which require us to disclose certain information about proceedings arising under federal, state, or local provisions regulating the discharge of materials into the environment or protecting the environment if we reasonably believe that such proceedings will result in monetary sanctions of $100,000 or more.

U.S. EPA (Fuels). In our quarterly report on Form 10-Q for the quarter ended March 31, 2017, we reported that we had received a Notice of Violation (NOV) from the U.S. EPA related to violations from the Mobile Source Inspection of 2015, which we believe will result in penalties in excess of $100,000. We continue to work with the EPA to resolve this matter.

People of the State of Illinois, ex rel. v. The Premcor Refining Group Inc., et al. , Third Judicial Circuit Court, Madison County (Case No. 03-CH-00459, filed May 29, 2003) (Hartford Refinery and terminal). In our quarterly report on Form 10-Q for the quarter ended September 30, 2017, we reported that the Illinois EPA had filed suit against The Premcor Refining Group Inc. alleging violations of air and waste regulations at Premcor’s Hartford, Illinois terminal and closed refinery. We have entered into a Partial Consent Order resolving various air and permitting violations. Our litigation with other potentially responsible parties (PRPs) and the Illinois EPA continues. We continue to assert our various defenses, limitations and potential rights for contribution from the other PRPs.

Bay Area Air Quality Management District (BAAQMD) (Benicia Refinery). We currently have multiple outstanding Violation Notices (VNs) issued by the BAAQMD from 2015 to present. These VNs are for various alleged air regulation and air permit violations at our Benicia Refinery and asphalt plant. In the fourth quarter of 2017, we entered into an agreement with BAAQMD to resolve various VNs and continue to work with the BAAQMD to resolve the remaining VNs.

South Coast Air Quality Management District (SCAQMD) (Wilmington Refinery). We currently have multiple NOVs issued by the SCAQMD. These NOVs are for alleged reporting violations and excess emissions at our Wilmington Refinery. We continue to work with the SCAQMD to resolve these NOVs.

Texas Commission on Environmental Quality (TCEQ) (McKee Refinery). In our annual report on Form 10-K for the year ended December 31, 2016, we reported that we had received a proposed Agreed Order in the amount of $121,314 from the TCEQ as an administrative penalty for alleged excess emissions at our McKee Refinery. We continue to work with the TCEQ to resolve this matter.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

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

Our common stock trades on the NYSE under the symbol "VLO."

As of January 31, 2018, there were 5,483 holders of record of our common stock.

The following table shows the high and low sales prices of and dividends declared on our common stock for each quarter of 2017 and 2016.

	Sales Prices of the Common Stock		Dividends Per Common Share
Quarter Ended	**High**	**Low**	
2017:			
December 31	$ 93.18	$ 75.84	$ 0.70
September 30	77.77	64.22	0.70
June 30	68.39	60.69	0.70
March 31	71.40	64.45	0.70
2016:			
December 31	$ 69.85	$ 52.51	$ 0.60
September 30	58.08	46.88	0.60
June 30	64.06	49.91	0.60
March 31	72.49	52.55	0.60

On January 23, 2018, our board of directors declared a quarterly cash dividend of $0.80 per common share payable March 6, 2018 to holders of record at the close of business on February 13, 2018.

Dividends are considered quarterly by the board of directors, may be paid only when approved by the board, and will depend on our financial condition, results of operations, cash flows, prospects, industry conditions, capital requirements, and other factors and restrictions our board deems relevant. There can be no assurance that we will pay a dividend at the rates we have paid historically, or at all, in the future.

The following table discloses purchases of shares of our common stock made by us or on our behalf during the fourth quarter of 2017.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Not Purchased as Part of Publicly Announced Plans or Programs (a)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs (b)
October 2017	515,762	$ 77.15	292,145	223,617	$1.6 billion
November 2017	2,186,889	$ 81.21	216,415	1,970,474	$1.4 billion
December 2017	2,330,263	$ 87.76	798	2,329,465	$1.2 billion
Total	5,032,914	$ 83.83	509,358	4,523,556	$1.2 billion

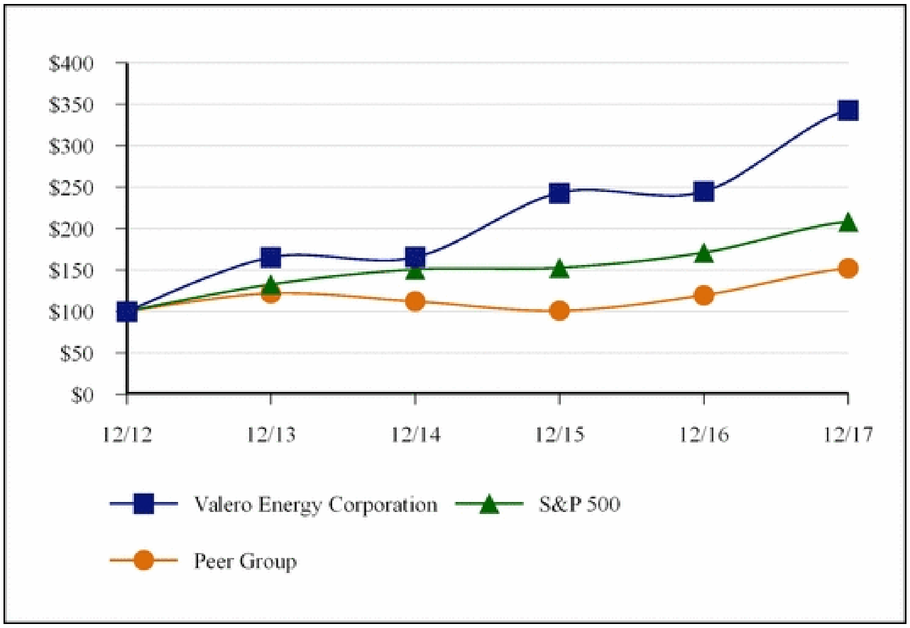
(a) The shares reported in this column represent purchases settled in the fourth quarter of 2017 relating to (i) our purchases of shares in open-market transactions to meet our obligations under stock-based compensation plans, and (ii) our purchases of shares from our employees and non-employee directors in connection with the exercise of stock options, the vesting of restricted stock, and other stock compensation transactions in accordance with the terms of our stock-based compensation plans.

(b) On September 21, 2016, we announced that our board of directors authorized our purchase of up to $2.5 billion of our outstanding common stock (the 2016 program) with no expiration date. As of December 31, 2017, we had $1.2 billion remaining available for purchase under the 2016 program. On January 23, 2018, we announced that our board of directors authorized our purchase of up to an additional $2.5 billion of our outstanding common stock with no expiration date.

The following performance graph is not "soliciting material," is not deemed filed with the SEC, and is not to be incorporated by reference into any of Valero's filings under the Securities Act of 1933 or the Securities Exchange Act of 1934, as amended, respectively.

This performance graph and the related textual information are based on historical data and are not indicative of future performance. The following line graph compares the cumulative total return[a] on an investment in our common stock against the cumulative total return of the S&P 500 Composite Index and an index of peer companies (that we selected) for the five-year period commencing December 31, 2012 and ending December 31, 2017. Our peer group comprises the following nine companies: Andeavor; BP plc; CVR Energy, Inc.; Delek US Holdings, Inc.; HollyFrontier Corporation; Marathon Petroleum Corporation; PBF Energy Inc.; Phillips 66; and Royal Dutch Shell plc.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN[a]
Among Valero Energy Corporation, the S&P 500 Index,
and Peer Group



	As of December 31,					
	2012	2013	2014	2015	2016	2017
Valero Common Stock	$ 100.00	$ 165.00	$ 165.40	$ 242.80	$ 244.71	$ 342.54
S&P 500	100.00	132.39	150.51	152.59	170.84	208.14
Peer Group	100.00	121.56	111.98	100.82	119.45	151.71

(a) Assumes that an investment in Valero common stock and each index was $100 on December 31, 2012. "Cumulative total return" is based on share price appreciation plus reinvestment of dividends from December 31, 2012 through December 31, 2017.

ITEM 6. SELECTED FINANCIAL DATA

The selected financial data for the five-year period ended December 31, 2017 was derived from our audited financial statements. The following table should be read together with Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and with the historical financial statements and accompanying notes included in Item 8, "Financial Statements and Supplementary Data."

The following summaries are in millions of dollars, except for per share amounts:

	Year Ended December 31,				
	2017 (a)	2016 (b)	2015 (c)	2014	2013 (d)
Operating revenues	$ 93,980	$ 75,659	$ 87,804	$ 130,844	$ 138,074
Income from continuing operations	4,156	2,417	4,101	3,775	2,722
Earnings per common share from continuing operations – assuming dilution	9.16	4.94	7.99	6.97	4.96
Dividends per common share	2.80	2.40	1.70	1.05	0.85
Total assets	50,158	46,173	44,227	45,355	46,957
Debt and capital lease obligations, less current portion	8,750	7,886	7,208	5,747	6,224

(a) Includes the impact of Tax Reform that was enacted on December 22, 2017 and resulted in a net income tax benefit of $1.9 billion ($4.26 per share – assuming dilution) as further described in Note 14 of Notes to Consolidated Financial Statements.

(b) Includes a noncash lower of cost or market inventory valuation reserve adjustment that resulted in a net benefit to our results of operations of $747 million as described in Note 4 of Notes to Consolidated Financial Statements.

(c) Includes a noncash lower of cost or market inventory valuation reserve adjustment that resulted in a net charge to our results of operations of $790 million.

(d) Includes the operations of our retail business prior to its separation from us on May 1, 2013.

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

The following review of our results of operations and financial condition should be read in conjunction with Item 1A, "Risk Factors," and Item 8, "Financial Statements and Supplementary Data," included in this report.

CAUTIONARY STATEMENT FOR THE PURPOSE OF SAFE HARBOR PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995

This report, including without limitation our disclosures below under the heading "OVERVIEW AND OUTLOOK," includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. You can identify our forward-looking statements by the words "anticipate," "believe," "expect," "plan," "intend," "estimate," "project," "projection," "predict," "budget," "forecast," "goal," "guidance," "target," "could," "should," "may," and similar expressions.

These forward-looking statements include, among other things, statements regarding:

- future refining segment margins, including gasoline and distillate margins;
- future ethanol segment margins;
- expectations regarding feedstock costs, including crude oil differentials, and operating expenses;
- anticipated levels of crude oil and refined petroleum product inventories;
- our anticipated level of capital investments, including deferred costs for refinery turnarounds and catalyst, capital expenditures for environmental and other purposes, and joint venture investments, and the effect of those capital investments on our results of operations;
- anticipated trends in the supply of and demand for crude oil and other feedstocks and refined petroleum products in the regions where we operate, as well as globally;
- expectations regarding environmental, tax, and other regulatory initiatives; and
- the effect of general economic and other conditions on refining, ethanol, and midstream industry fundamentals.

We based our forward-looking statements on our current expectations, estimates, and projections about ourselves and our industry. We caution that these statements are not guarantees of future performance and involve risks, uncertainties, and assumptions that we cannot predict. In addition, we based many of these forward-looking statements on assumptions about future events that may prove to be inaccurate. Accordingly, our actual results may differ materially from the future performance that we have expressed or forecast in the forward-looking statements. Differences between actual results and any future performance suggested in these forward-looking statements could result from a variety of factors, including the following:

- acts of terrorism aimed at either our facilities or other facilities that could impair our ability to produce or transport refined petroleum products or receive feedstocks;
- political and economic conditions in nations that produce crude oil or consume refined petroleum products;
- demand for, and supplies of, refined petroleum products such as gasoline, diesel, jet fuel, petrochemicals, and ethanol;
- demand for, and supplies of, crude oil and other feedstocks;
- the ability of the members of the Organization of Petroleum Exporting Countries to agree on and to maintain crude oil price and production controls;
- the level of consumer demand, including seasonal fluctuations;

- refinery overcapacity or undercapacity;
- our ability to successfully integrate any acquired businesses into our operations;
- the actions taken by competitors, including both pricing and adjustments to refining capacity in response to market conditions;
- the level of competitors' imports into markets that we supply;
- accidents, unscheduled shutdowns, or other catastrophes affecting our refineries, machinery, pipelines, equipment, and information systems, or those of our suppliers or customers;
- changes in the cost or availability of transportation for feedstocks and refined petroleum products;
- the price, availability, and acceptance of alternative fuels and alternative-fuel vehicles;
- the levels of government subsidies for alternative fuels;
- the volatility in the market price of biofuel credits (primarily RINs needed to comply with the RFS) and GHG emission credits needed to comply with the requirements of various GHG emission programs;
- delay of, cancellation of, or failure to implement planned capital projects and realize the various assumptions and benefits projected for such projects or cost overruns in constructing such planned capital projects;
- earthquakes, hurricanes, tornadoes, and irregular weather, which can unforeseeably affect the price or availability of natural gas, crude oil, grain and other feedstocks, and refined petroleum products and ethanol;
- rulings, judgments, or settlements in litigation or other legal or regulatory matters, including unexpected environmental remediation costs, in excess of any reserves or insurance coverage;
- legislative or regulatory action, including the introduction or enactment of legislation or rulemakings by governmental authorities, including tax and environmental regulations, such as those implemented under the California cap-and-trade system (also known as AB 32), the Quebec cap-and-trade system, the Ontario cap-and-trade system, and the U.S. EPA's regulation of GHGs, which may adversely affect our business or operations;
- changes in the credit ratings assigned to our debt securities and trade credit;
- changes in currency exchange rates, including the value of the Canadian dollar, the pound sterling, the euro, and the Mexican peso relative to the U.S. dollar;
- overall economic conditions, including the stability and liquidity of financial markets; and
- other factors generally described in the "Risk Factors" section included in Item 1A, "Risk Factors" in this report.

Any one of these factors, or a combination of these factors, could materially affect our future results of operations and whether any forward-looking statements ultimately prove to be accurate. Our forward-looking statements are not guarantees of future performance, and actual results and future performance may differ materially from those suggested in any forward-looking statements. We do not intend to update these statements unless we are required by the securities laws to do so.

All subsequent written and oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the foregoing. We undertake no obligation to publicly release any revisions to any such forward-looking statements that may be made to reflect events or circumstances after the date of this report or to reflect the occurrence of unanticipated events.

This report includes references to financial measures that are not defined under U.S. generally accepted accounting principles (GAAP). These non-GAAP financial measures include adjusted net income attributable to Valero stockholders, adjusted operating income (loss), and refining and ethanol segment margin. We have included these non-GAAP financial measures to help facilitate the comparison of operating results between periods. See the accompanying financial tables in "RESULTS OF OPERATIONS" and note (d) to the accompanying tables for reconciliations of these non-GAAP financial measures to the most directly comparable U.S. GAAP financial measures. Also in note (d), we disclose the reasons why we believe our use of the non-GAAP financial measures provides useful information.

OVERVIEW AND OUTLOOK

Overview

For 2017, we reported net income attributable to Valero stockholders of $4.1 billion compared to $2.3 billion for 2016, which represents an increase of $1.8 billion. This increase is primarily due to a $1.9 billion income tax benefit in 2017 resulting from the implementation of the provisions under Tax Reform, which was enacted on December 22, 2017. See Note 14 of Notes to Consolidated Financial Statements for additional information about Tax Reform and the $1.9 billion benefit recorded by us. Excluding the impact of Tax Reform, adjusted net income attributable to Valero stockholders in 2017 was $2.2 billion. This compares to adjusted net income attributable to Valero stockholders of $1.7 billion in 2016, which has been adjusted for the amounts reflected in the table on page 34. The $479 million increase in adjusted net income attributable to Valero stockholders was primarily due to a $779 million increase in adjusted operating income between the years net of the resulting increase in income tax expense.

Operating income was $3.6 billion in each of 2017 and 2016. Excluding the amounts reflected in the tables on page 34 from both years, adjusted operating income was $3.7 billion in 2017 compared to $2.9 billion in 2016, which represents an increase of $779 million.

The $779 million increase in adjusted operating income is primarily due to the following:

- *Refining segment.* Refining segment adjusted operating income increased by $942 million due to higher margins on refined petroleum products and higher throughput volumes, partially offset by lower discounts on sour crude oils and other feedstocks, higher cost of biofuel credits, and higher operating expenses (excluding depreciation and amortization expense). This is more fully described on pages 38 through 40.

- *Ethanol segment.* Ethanol segment adjusted operating income decreased by $118 million primarily due to lower ethanol and corn related co-products prices. This is more fully described on page 40.

- *VLP segment.* VLP segment adjusted operating income increased by $74 million primarily due to incremental revenues generated from transportation and terminaling services provided to our refining segment associated with terminals acquired in 2016 and 2017, a product pipeline system acquired in 2017, and the acquisition of an undivided interest in crude system assets in 2017. This is more fully described on page 41.

- *Corporate and eliminations.* Corporate and eliminations, which consists primarily of general and administrative expenses and related depreciation and amortization expense, increased by $119 million primarily due to higher employee related costs, legal and environmental reserves, and other expenses, which are more fully described on page 38.

Additional details and analysis for the changes in operating income and adjusted operating income for our reportable business segments and other components of net income and adjusted net income attributable to Valero stockholders, including a reconciliation of non-GAAP financial measures used in this Overview to their most comparable measures reported under U.S. GAAP, are provided below under “RESULTS OF OPERATIONS”.

Outlook

Below are several factors that have impacted or may impact our results of operations during the first quarter of 2018:

- Refining and ethanol margins are expected to remain near current levels.

- Medium and heavy sour crude oil discounts are expected to remain weaker than their five-year averages as supplies of sour crude oils in the market remain suppressed.

- Sweet crude discounts are expected to remain near current levels as export demand remains strong and increased supplies from the Permian Basin are delivered into U.S. Gulf Coast markets.

- Legislation authorizing the extension of the $1 per gallon biodiesel blender's tax credit for biodiesel volumes blended in 2017 was passed and signed into law in February 2018. As a result, we will recognize a benefit to cost of materials and other in our refining segment results of operations for the first quarter of 2018 of approximately $170 million. The majority of this amount will be recognized by one of our consolidated variable interest entities (VIEs) in which we own a 50 percent interest; therefore, approximately one half of this amount (after taxes) will be excluded from net income attributable to Valero stockholders.

RESULTS OF OPERATIONS

The following tables highlight our results of operations, our operating performance, and market reference prices that directly impact our operations. In addition, these tables include financial measures that are not defined under U.S. GAAP and represent non-GAAP financial measures. These non-GAAP financial measures are reconciled to their most comparable U.S. GAAP financial measures and include adjusted net income attributable to Valero stockholders, adjusted operating income, and refining and ethanol segment margin. In note (d) to these tables, we disclose the reasons why we believe our use of non-GAAP financial measures provides useful information.

Effective January 1, 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, we created a new reportable segment — VLP. The results of the VLP segment, which include the results of our majority-owned master limited partnership referred to by the same name, were transferred from the refining segment. Our prior period segment information has been retrospectively adjusted to reflect our current segment presentation. The narrative following these tables provides an analysis of our results of operations.

Financial Highlights by Segment and Total Company
(millions of dollars)

	Year Ended December 31, 2017				
	Refining	Ethanol	VLP	Corporate and Eliminations	Total
Operating revenues:					
Operating revenues from external customers	$ 90,651	$ 3,324	$ —	$ 5	$ 93,980
Intersegment revenues	6	176	452	(634)	—
Total operating revenues	90,657	3,500	452	(629)	93,980
Cost of sales:					
Cost of materials and other	80,865	2,804	—	(632)	83,037
Operating expenses (excluding depreciation and amortization expense reflected below)	3,917	443	104	(2)	4,462
Depreciation and amortization expense	1,800	81	53	—	1,934
Total cost of sales	86,582	3,328	157	(634)	89,433
Other operating expenses (a)	58	—	3	—	61
General and administrative expenses (excluding depreciation and amortization expense reflected below)	—	—	—	835	835
Depreciation and amortization expense	—	—	—	52	52
Operating income by segment	$ 4,017	$ 172	$ 292	$ (882)	3,599
Other income, net					76
Interest and debt expense, net of capitalized interest					(468)
Income before income tax benefit					3,207
Income tax benefit					(949)
Net income					4,156
Less: Net income attributable to noncontrolling interests					91
Net income attributable to Valero Energy Corporation stockholders					$ 4,065

See note references on pages 48 through 50.

Financial Highlights by Segment and Total Company (continued)
(millions of dollars)

	Year Ended December 31, 2016				
	Refining	**Ethanol**	**VLP**	**Corporate and Eliminations**	**Total**
Operating revenues:					
Operating revenues from external customers	$ 71,968	$ 3,691	$ —	$ —	$ 75,659
Intersegment revenues	—	210	363	(573)	—
Total operating revenues	71,968	3,901	363	(573)	75,659
Cost of sales:					
Cost of materials and other	63,405	3,130	—	(573)	65,962
Operating expenses (excluding depreciation and amortization expense reflected below)	3,696	415	96	—	4,207
Depreciation and amortization expense	1,734	66	46	—	1,846
Lower of cost or market inventory valuation adjustment (b)	(697)	(50)	—	—	(747)
Total cost of sales	68,138	3,561	142	(573)	71,268
General and administrative expenses (excluding depreciation and amortization expense reflected below)	—	—	—	715	715
Depreciation and amortization expense	—	—	—	48	48
Asset impairment loss (c)	56	—	—	—	56
Operating income by segment	$ 3,774	$ 340	$ 221	$ (763)	3,572
Other income, net					56
Interest and debt expense, net of capitalized interest					(446)
Income before income tax expense					3,182
Income tax expense					765
Net income					2,417
Less: Net income attributable to noncontrolling interests					128
Net income attributable to Valero Energy Corporation stockholders					$ 2,289

See note references on pages 48 through 50.

Financial Highlights by Segment and Total Company (continued)
(millions of dollars)

	Year Ended December 31, 2017	Year Ended December 31, 2016
Reconciliation of net income attributable to Valero Energy Corporation stockholders to adjusted net income attributable to Valero Energy Corporation stockholders (d)		
Net income attributable to Valero Energy Corporation stockholders	$ 4,065	$ 2,289
Exclude adjustments:		
Lower of cost or market inventory valuation adjustment (b)	—	747
Income tax expense related to the lower of cost or market inventory valuation adjustment	—	(168)
Lower of cost or market inventory valuation adjustment, net of taxes	—	579
Asset impairment loss (c)	—	(56)
Income tax benefit on Aruba Disposition (c)	—	42
Income tax benefit from Tax Reform (e)	1,862	—
Total adjustments	1,862	565
Adjusted net income attributable to Valero Energy Corporation stockholders	$ 2,203	$ 1,724

	Year Ended December 31, 2017				
	Refining	Ethanol	VLP	Corporate and Eliminations	Total
Reconciliation of operating income to adjusted operating income (d)					
Operating income by segment	$ 4,017	$ 172	$ 292	$ (882)	$ 3,599
Exclude:					
Other operating expenses (a)	(58)	—	(3)	—	(61)
Adjusted operating income	$ 4,075	$ 172	$ 295	$ (882)	$ 3,660

	Year Ended December 31, 2016				
	Refining	Ethanol	VLP	Corporate and Eliminations	Total
Reconciliation of operating income to adjusted operating income (d)					
Operating income by segment	$ 3,774	$ 340	$ 221	$ (763)	$ 3,572
Exclude:					
Lower of cost or market inventory valuation adjustment (b)	697	50	—	—	747
Asset impairment loss (c)	(56)	—	—	—	(56)
Adjusted operating income	$ 3,133	$ 290	$ 221	$ (763)	$ 2,881

See note references on pages 48 through 50.

Refining Segment Operating Highlights
(millions of dollars, except per barrel amounts)

	Year Ended December 31,		
	2017	2016	Change
Throughput volumes (thousand BPD)			
Feedstocks:			
Heavy sour crude oil	469	396	73
Medium/light sour crude oil	458	526	(68)
Sweet crude oil	1,323	1,193	130
Residuals	219	272	(53)
Other feedstocks	148	152	(4)
Total feedstocks	2,617	2,539	78
Blendstocks and other	323	316	7
Total throughput volumes	2,940	2,855	85
Yields (thousand BPD)			
Gasolines and blendstocks	1,423	1,404	19
Distillates	1,127	1,066	61
Other products (f)	428	421	7
Total yields	2,978	2,891	87
Operating statistics			
Refining segment margin (d)	$ 9,792	$ 8,563	$ 1,229
Adjusted refining segment operating income (see page 34) (d)	$ 4,075	$ 3,133	$ 942
Throughput volumes (thousand BPD)	2,940	2,855	85
Refining segment margin per barrel of throughput (g)	$ 9.12	$ 8.20	$ 0.92
Less:			
Operating expenses (excluding depreciation and amortization expense reflected below) per barrel of throughput	3.65	3.54	0.11
Depreciation and amortization expense per barrel of throughput	1.67	1.66	0.01
Adjusted refining segment operating income per barrel of throughput (h)	$ 3.80	$ 3.00	$ 0.80

See note references on pages 48 through 50.

Ethanol Segment Operating Highlights
(millions of dollars, except per gallon amounts)

	Year Ended December 31,		
	2017	2016	Change
Operating statistics			
Ethanol segment margin (d)	$ 696	$ 771	$ (75)
Adjusted ethanol segment operating income (see page 34) (d)	$ 172	$ 290	$ (118)
Production volumes (thousand gallons per day)	3,972	3,842	130
Ethanol segment margin per gallon of production (g)	$ 0.48	$ 0.55	$ (0.07)
Less:			
Operating expenses (excluding depreciation and amortization expense reflected below) per gallon of production	0.31	0.30	0.01
Depreciation and amortization expense per gallon of production	0.05	0.04	0.01
Adjusted ethanol segment operating income per gallon of production (h)	$ 0.12	$ 0.21	$ (0.09)

VLP Segment Operating Highlights
(millions of dollars, except per barrel amounts)

	Year Ended December 31,		
	2017	2016	Change
Operating statistics			
Pipeline transportation revenue	$ 101	$ 78	$ 23
Terminaling revenue	348	284	64
Storage and other revenue	3	1	2
Total VLP segment operating revenues	$ 452	$ 363	$ 89
Pipeline transportation throughput (thousand BPD)	964	829	135
Pipeline transportation revenue per barrel of throughput (g)	$ 0.29	$ 0.26	$ 0.03
Terminaling throughput (thousand BPD)	2,889	2,265	624
Terminaling revenue per barrel of throughput (g)	$ 0.33	$ 0.34	$ (0.01)

See note references on pages 48 through 50.

Table of Contents

Average Market Reference Prices and Differentials
(dollars per barrel, except as noted)

	Year Ended December 31,		
	2017	**2016**	**Change**
Feedstocks			
Brent crude oil	$ 54.82	$ 45.02	$ 9.80
Brent less West Texas Intermediate (WTI) crude oil	3.92	1.83	2.09
Brent less Alaska North Slope (ANS) crude oil	0.26	1.25	(0.99)
Brent less Louisiana Light Sweet (LLS) crude oil	0.69	0.15	0.54
Brent less Argus Sour Crude Index (ASCI) crude oil	4.18	5.18	(1.00)
Brent less Maya crude oil	7.74	8.63	(0.89)
LLS crude oil	54.13	44.87	9.26
LLS less ASCI crude oil	3.49	5.03	(1.54)
LLS less Maya crude oil	7.05	8.48	(1.43)
WTI crude oil	50.90	43.19	7.71
Natural gas (dollars per MMBtu)	2.98	2.46	0.52
Products			
U.S. Gulf Coast:			
CBOB gasoline less Brent	10.50	9.17	1.33
Ultra-low-sulfur diesel less Brent	13.26	10.21	3.05
Propylene less Brent	0.48	(6.68)	7.16
CBOB gasoline less LLS	11.19	9.32	1.87
Ultra-low-sulfur diesel less LLS	13.95	10.36	3.59
Propylene less LLS	1.17	(6.53)	7.70
U.S. Mid-Continent:			
CBOB gasoline less WTI	15.65	11.82	3.83
Ultra-low-sulfur diesel less WTI	18.50	13.03	5.47
North Atlantic:			
CBOB gasoline less Brent	12.57	11.99	0.58
Ultra-low-sulfur diesel less Brent	14.75	11.57	3.18
U.S. West Coast:			
CARBOB 87 gasoline less ANS	18.12	17.04	1.08
CARB diesel less ANS	17.11	14.52	2.59
CARBOB 87 gasoline less WTI	21.78	17.62	4.16
CARB diesel less WTI	20.77	15.10	5.67
New York Harbor corn crush (dollars per gallon)	0.26	0.30	(0.04)

Total Company, Corporate, and Other

Operating revenues increased $18.3 billion in 2017 compared to 2016 primarily due to increases in refined petroleum product prices associated with our refining segment. This improvement in operating revenues was mostly offset by higher cost of materials and other and increases in other components of cost of sales between the years, resulting in an increase in operating income of $27 million in 2017 compared to 2016.

Excluding the adjustments to operating income in both years reflected in the tables on page 34, adjusted operating income was $3.7 billion in 2017 compared to $2.9 billion in 2016. Details regarding the $779 million increase in adjusted operating income between the years are discussed by segment below.

Corporate and eliminations, which consists primarily of general and administrative expenses and related depreciation and amortization expense, increased by $119 million in 2017 compared to 2016 primarily due to higher employee related costs of $50 million, an increase in legal and environmental reserves of $21 million, expenses associated with the termination of an acquisition transaction of $16 million, and an increase in charitable contributions of $10 million.

Income tax expense decreased $1.7 billion from 2016 to 2017 primarily due to a $1.9 billion income tax benefit in 2017 resulting from Tax Reform, which is more fully described in Note 14 of Notes to Consolidated Financial Statements. Excluding this benefit, the effective tax rate for 2017 was 28 percent. This compares to an effective tax rate of 26 percent in 2016, which has been adjusted for the income tax adjustments reflected in the table on page 34. The effective tax rates are lower than the U.S. statutory rate of 35 percent that was in effect through December 31, 2017, primarily because income from our international operations was taxed at statutory rates that were lower than in the U.S. The effective tax rate in 2016 was lower than the 2017 rate due to a benefit of $35 million resulting from the favorable resolution of an income tax audit.

Refining Segment Results

Refining segment operating revenues increased $18.7 billion and cost of materials and other increased $17.5 billion in 2017 compared to 2016 primarily due to increases in refined petroleum product prices and crude oil feedstock costs, respectively. The resulting $1.2 billion increase in refining segment margin (as defined in note (d) on page 48) was partially offset by increases in other components of cost of sales between the years, resulting in an increase in operating income of $243 million, from $3.8 billion in 2016 to $4.0 billion in 2017.

Excluding the adjustments reflected in the tables on page 34 from operating income in both years, adjusted operating income was $4.1 billion in 2017 compared to $3.1 billion in 2016, an increase of $942 million. The components of this increase are outlined below, along with the reasons for the changes in these components between the years.

Refining segment margin increased $1.2 billion in 2017 compared to 2016, as previously noted, primarily due to the following:

- *Increase in distillate margins.* We experienced improved distillate margins throughout all of our regions in 2017 compared to 2016. For example, the Brent-based benchmark reference margin for U.S. Gulf Coast ultra-low-sulfur diesel was $13.26 per barrel in 2017 compared to $10.21 per barrel in 2016, representing a favorable increase of $3.05 per barrel. Another example is the WTI-based benchmark reference margin for U.S. Mid-Continent ultra-low-sulfur diesel that was $18.50 per barrel in 2017 compared to $13.03 per barrel in 2016, representing a favorable increase of $5.47 per barrel. We estimate that the increase in distillate margins per barrel in 2017 compared to 2016 had a positive impact to our refining segment margin of approximately $1.2 billion.

- *Increase in gasoline margins.* We also experienced improved gasoline margins throughout all of our regions in 2017 compared to 2016. For example, the WTI-based benchmark reference margin for U.S. Mid-Continent CBOB gasoline was $15.65 per barrel in 2017 compared to $11.82 per barrel in 2016, representing a favorable increase of $3.83 per barrel. Another example is the Brent-based benchmark reference margin for U.S. Gulf Coast CBOB gasoline, which was $10.50 per barrel in 2017 compared to $9.17 per barrel in 2016, representing a favorable increase of $1.33 per barrel. We estimate that the increase in gasoline margins per barrel in 2017 compared to 2016 had a favorable impact to our refining segment margin of approximately $577 million.

- *Higher throughput volumes.* Refining segment throughput volumes increased by 85,000 BPD in 2017. We estimate that the increase in refining throughput volumes had a positive impact on our refining segment margin of approximately $283 million.

- *Lower discounts on sour crude oils.* The market prices for refined petroleum products generally track the price of Brent crude oil, which is a benchmark sweet crude oil, and we benefit when we process sour crude oils that are priced at a discount to Brent crude oil. While we benefited from processing these sour crude oils in 2017, that benefit declined compared to 2016. For example, ASCI crude oil processed in our U.S. Gulf Coast region sold at a discount to Brent of $4.18 per barrel in 2017 compared to a discount of $5.18 per barrel in 2016, representing an unfavorable decrease of $1.00 per barrel. Another example is Maya crude oil that sold at a discount to Brent of $7.74 per barrel in 2017 compared to $8.63 per barrel in 2016, representing an unfavorable decrease of $0.89 per barrel. We estimate that the reduction in discounts for sour crude oils that we processed in 2017 had an unfavorable impact to our refining segment margin of approximately $305 million.

- *Lower discounts on other feedstocks.* In addition to crude oil, we utilize other feedstocks such as residuals, in certain of our refining processes. We benefit when we process these other feedstocks that are priced at a discount to Brent crude oil. While we benefited from processing these types of feedstocks in 2017, that benefit declined compared to 2016. We estimate that the reduction in the discounts for the other feedstocks that we processed in 2017 had an unfavorable impact to our refining segment margin of approximately $203 million.

- *Higher costs of biofuel credits.* As more fully described in Note 19 of Notes to Consolidated Financial Statements, we must purchase biofuel credits in order to meet our biofuel blending obligation under various government and regulatory compliance programs, and the cost of these credits (primarily RINs in the U.S.) increased by $193 million from $749 million in 2016 to $942 million in 2017.

- *Increase in charges from VLP.* Charges from the VLP segment for transportation and terminaling services increased $89 million in 2017 compared to 2016 primarily due to additional services provided to the refining segment using terminals acquired by VLP in 2016 and 2017, a pipeline system acquired by VLP in 2017, and an undivided interest in crude system assets acquired by VLP in 2017. The increase in charges from VLP are more fully discussed in the VLP segment analysis below.

Refining segment operating expenses (excluding depreciation and amortization expense) increased $221 million primarily due to an increase in energy costs driven by higher natural gas prices ($2.98 per MMBtu in the 2017 compared to $2.46 per MMBtu in 2016).

Refining segment depreciation and amortization expense associated with our cost of sales increased $66 million due to an increase in refinery turnaround and catalyst amortization expense primarily due to costs incurred in the latter part of 2016 in connection with significant turnaround projects at our Port Arthur and Texas City Refineries.

Ethanol Segment Results

Ethanol segment operating revenues decreased $401 million and cost of materials and other decreased $326 million in 2017 compared to 2016 primarily due to decreases in ethanol and corn related co-product prices and lower corn prices, respectively. The resulting $75 million decrease in ethanol segment margin (as defined in note (d) on page 48), along with increases in other components of cost of sales between the years, resulted in a decrease in operating income of $168 million, from $340 million in 2016 to $172 million in 2017.

Excluding the adjustment reflected in the table on page 34 from 2016 operating income, adjusted operating income in 2016 was $290 million. Compared to this adjusted amount, operating income in 2017 decreased $118 million. The components of this decrease are outlined below, along with changes in these components between the years.

Ethanol segment margin decreased $75 million in 2017 compared to 2016, as previously noted, primarily due to the following:

- *Lower ethanol prices.* Ethanol prices were lower in 2017 compared to 2016 primarily due to higher industry production, which resulted in higher domestic inventories. For example, the New York Harbor ethanol price was $1.56 per gallon in 2017 compared to $1.60 per gallon in 2016. We estimate that the decrease in the price of ethanol had an unfavorable impact to our ethanol segment margin of approximately $73 million.

- *Lower co-product prices.* A decrease in export demand for corn related co-products, primarily distillers grains, had an unfavorable effect on the prices we received. We estimate that the decrease for corn related co-product prices had an unfavorable impact to our ethanol segment margin of approximately $52 million.

- *Lower corn prices.* Despite a slight increase in the Chicago Board of Trade (CBOT) corn price from $3.58 per bushel in 2016 to $3.59 per bushel in 2017, we acquired corn at lower prices due to favorable location differentials, resulting in a decrease in the price we paid for corn in 2017 compared to 2016. We estimate that the decrease in the price we paid for corn had a favorable impact to our ethanol segment margin of approximately $25 million.

- *Higher production volumes.* Ethanol segment margin was favorably impacted by increased production volumes of 130,000 gallons per day in 2017 compared to 2016 primarily due to reliability improvements. We estimate that the increase in production volumes had a favorable impact to our ethanol segment margin of approximately $25 million.

Ethanol segment operating expenses (excluding depreciation and amortization expense) increased $28 million primarily due to an increase in energy costs driven by higher natural gas prices ($2.98 per MMBtu in 2017 compared to $2.46 per MMBtu in 2016).

Ethanol segment depreciation and amortization expense associated with our cost of sales increased $15 million primarily due to the write-off of assets that were idled in 2017.

VLP Segment Results

VLP segment operating revenues increased $89 million in 2017 compared to 2016 primarily due to incremental revenues generated from transportation and terminaling services provided to our refining segment associated with terminals and pipelines acquired in 2016 and 2017. This increase in VLP segment revenues was partially offset by increases in components of cost of sales between the years, resulting in an increase in operating income of $71 million, from $221 million in 2016 to $292 million in 2017.

Excluding the adjustment reflected in the table on page 34 from 2017 operating income, adjusted operating income in 2017 was $295 million, an increase of $74 million compared to 2016. The components of this increase are outlined below, along with the reasons for the changes in these components between the years.

VLP segment revenues increased $89 million in 2017 compared to 2016, as previously noted, primarily due to the following:

- *Incremental throughput from acquired businesses and assets.* VLP generated incremental terminaling revenues of $56 million from services provided to the refining segment by the McKee, Meraux, Three Rivers, and Port Arthur terminals. The McKee, Meraux, and Three Rivers Terminals were acquired in 2016 and the Port Arthur terminal was acquired in 2017. VLP also generated incremental pipeline revenues of $15 million from the Parkway pipeline and Red River crude system, which were acquired in 2017. The incremental revenues generated by these businesses and assets had a favorable impact to VLP's operating revenues of $71 million.

- *Higher throughput volumes at systems owned or acquired prior to 2016.* The refining segment shipped higher volumes of crude oil and refined petroleum products using VLP's terminals and pipeline systems owned or acquired prior to 2016, which resulted in incremental revenues of $16 million in 2017.

VLP segment operating expenses (excluding depreciation and amortization expense) and depreciation and amortization expense associated with our cost of sales increased $8 million and $7 million, respectively, primarily due to expenses associated with the Port Arthur terminal, the Parkway pipeline, and the Red River crude system, which were acquired in 2017.

Financial Highlights by Segment and Total Company
(millions of dollars)

	Year Ended December 31, 2016				
	Refining	Ethanol	VLP	Corporate and Eliminations	Total
Operating revenues:					
Operating revenues from external customers	$ 71,968	$ 3,691	$ —	$ —	$ 75,659
Intersegment revenues	—	210	363	(573)	—
Total operating revenues	71,968	3,901	363	(573)	75,659
Cost of sales:					
Cost of materials and other	63,405	3,130	—	(573)	65,962
Operating expenses (excluding depreciation and amortization expense reflected below)	3,696	415	96	—	4,207
Depreciation and amortization expense	1,734	66	46	—	1,846
Lower of cost or market inventory valuation adjustment (b)	(697)	(50)	—	—	(747)
Total cost of sales	68,138	3,561	142	(573)	71,268
General and administrative expenses (excluding depreciation and amortization expense reflected below)	—	—	—	715	715
Depreciation and amortization expense	—	—	—	48	48
Asset impairment loss (c)	56	—	—	—	56
Operating income by segment	$ 3,774	$ 340	$ 221	$ (763)	3,572
Other income, net					56
Interest and debt expense, net of capitalized interest					(446)
Income before income tax expense					3,182
Income tax expense					765
Net income					2,417
Less: Net income attributable to noncontrolling interests					128
Net income attributable to Valero Energy Corporation stockholders					$ 2,289

See note references on pages 48 through 50.

Financial Highlights by Segment and Total Company (continued)
(millions of dollars)

	Year Ended December 31, 2015				
	Refining	**Ethanol**	**VLP**	**Corporate and Eliminations**	**Total**
Operating revenues:					
Operating revenues from external customers	$ 84,521	$ 3,283	$ —	$ —	$ 87,804
Intersegment revenues	—	151	244	(395)	—
Total operating revenues	84,521	3,434	244	(395)	87,804
Cost of sales:					
Cost of materials and other	71,512	2,744	—	(395)	73,861
Operating expenses (excluding depreciation and amortization expense reflected below)	3,689	448	106	—	4,243
Depreciation and amortization expense	1,699	50	46	—	1,795
Lower of cost or market inventory valuation adjustment (b)	740	50	—	—	790
Total cost of sales	77,640	3,292	152	(395)	80,689
General and administrative expenses (excluding depreciation and amortization expense reflected below)	—	—	—	710	710
Depreciation and amortization expense	—	—	—	47	47
Operating income by segment	$ 6,881	$ 142	$ 92	$ (757)	6,358
Other income, net					46
Interest and debt expense, net of capitalized interest					(433)
Income before income tax expense					5,971
Income tax expense					1,870
Net income					4,101
Less: Net income attributable to noncontrolling interests					111
Net income attributable to Valero Energy Corporation stockholders					$ 3,990

See note references on pages 48 through 50.

Financial Highlights by Segment and Total Company (continued)
(millions of dollars)

	Year Ended December 31, 2016	Year Ended December 31, 2015
Reconciliation of net income attributable to Valero Energy Corporation stockholders to adjusted net income attributable to Valero Energy Corporation stockholders (d)		
Net income attributable to Valero Energy Corporation stockholders	$ 2,289	$ 3,990
Exclude adjustments:		
Lower of cost or market inventory valuation adjustment (b)	747	(790)
Income tax expense related to the lower of cost or market inventory valuation adjustment	(168)	166
Lower of cost or market inventory valuation adjustment, net of taxes	579	(624)
Asset impairment loss (c)	(56)	—
Income tax benefit on Aruba Disposition (c)	42	—
Total adjustments	565	(624)
Adjusted net income attributable to Valero Energy Corporation stockholders	$ 1,724	$ 4,614

Year Ended December 31, 2016	Refining	Ethanol	VLP	Corporate and Eliminations	Total
Reconciliation of operating income to adjusted operating income (d)					
Operating income by segment	$ 3,774	$ 340	$ 221	$ (763)	$ 3,572
Exclude:					
Lower of cost or market inventory valuation adjustment (b)	697	50	—	—	747
Asset impairment loss (c)	(56)	—	—	—	(56)
Adjusted operating income	$ 3,133	$ 290	$ 221	$ (763)	$ 2,881

Year Ended December 31, 2015	Refining	Ethanol	VLP	Corporate and Eliminations	Total
Reconciliation of operating income to adjusted operating income (d)					
Operating income by segment	$ 6,881	$ 142	$ 92	$ (757)	$ 6,358
Exclude:					
Lower of cost or market inventory valuation adjustment (b)	(740)	(50)	—	—	(790)
Adjusted operating income	$ 7,621	$ 192	$ 92	$ (757)	$ 7,148

See note references on pages 48 through 50.

Refining Segment Operating Highlights
(millions of dollars, except per barrel amounts)

	Year Ended December 31,		
	2016	**2015**	**Change**
Throughput volumes (thousand BPD)			
Feedstocks:			
Heavy sour crude oil	396	438	(42)
Medium/light sour crude oil	526	428	98
Sweet crude oil	1,193	1,208	(15)
Residuals	272	274	(2)
Other feedstocks	152	140	12
Total feedstocks	2,539	2,488	51
Blendstocks and other	316	311	5
Total throughput volumes	2,855	2,799	56
Yields (thousand BPD)			
Gasolines and blendstocks	1,404	1,364	40
Distillates	1,066	1,066	—
Other products (f)	421	408	13
Total yields	2,891	2,838	53
Operating statistics			
Refining segment margin (d)	$ 8,563	$ 13,009	$ (4,446)
Adjusted refining segment operating income (see page 44) (d)	$ 3,133	$ 7,621	$ (4,488)
Throughput volumes (thousand BPD)	2,855	2,799	56
Refining segment margin per barrel of throughput (g)	$ 8.20	$ 12.73	$ (4.53)
Less:			
Operating expenses (excluding depreciation and amortization expense reflected below) per barrel of throughput	3.54	3.61	(0.07)
Depreciation and amortization expense per barrel of throughput	1.66	1.66	—
Adjusted refining segment operating income per barrel of throughput (h)	$ 3.00	$ 7.46	$ (4.46)

See note references on pages 48 through 50.

Ethanol Segment Operating Highlights
(millions of dollars, except per gallon amounts)

	Year Ended December 31,		
	2016	**2015**	**Change**
Operating statistics			
Ethanol segment margin (d)	$ 771	$ 690	$ 81
Adjusted ethanol segment operating income (see page 44) (d)	$ 290	$ 192	$ 98
Production volumes (thousand gallons per day)	3,842	3,827	15
Ethanol segment margin per gallon of production (g)	$ 0.55	$ 0.49	$ 0.06
Less:			
Operating expenses (excluding depreciation and amortization expense reflected below) per gallon of production	0.30	0.32	(0.02)
Depreciation and amortization expense per gallon of production	0.04	0.03	0.01
Adjusted ethanol segment operating income per gallon of production (h)	$ 0.21	$ 0.14	$ 0.07

VLP Segment Operating Highlights
(millions of dollars, except per barrel amounts)

	Year Ended December 31,		
	2016	**2015**	**Change**
Operating statistics			
Pipeline transportation revenue	$ 78	$ 81	$ (3)
Terminaling revenue	284	162	122
Storage and other revenue	1	1	—
Total VLP segment operating revenues	$ 363	$ 244	$ 119
Pipeline transportation throughput (thousand barrels per day)	829	950	(121)
Pipeline transportation revenue per barrel of throughput (g)	$ 0.26	$ 0.23	$ 0.03
Terminaling throughput (thousand barrels per day)	2,265	1,340	925
Terminaling revenue per barrel of throughput (g)	$ 0.34	$ 0.33	$ 0.01

See note references on pages 48 through 50.

Average Market Reference Prices and Differentials
(dollars per barrel, except as noted)

	Year Ended December 31,		
	2016	**2015**	**Change**
Feedstocks			
Brent crude oil	$ 45.02	$ 53.62	$ (8.60)
Brent less West Texas Intermediate (WTI) crude oil	1.83	4.91	(3.08)
Brent less Alaska North Slope (ANS) crude oil	1.25	0.67	0.58
Brent less Louisiana Light Sweet (LLS) crude oil	0.15	1.26	(1.11)
Brent less Argus Sour Crude Index (ASCI) crude oil	5.18	5.63	(0.45)
Brent less Maya crude oil	8.63	9.54	(0.91)
LLS crude oil	44.87	52.36	(7.49)
LLS less ASCI crude oil	5.03	4.37	0.66
LLS less Maya crude oil	8.48	8.28	0.20
WTI crude oil	43.19	48.71	(5.52)
Natural gas (dollars per MMBtu)	2.46	2.58	(0.12)
Products			
U.S. Gulf Coast:			
CBOB gasoline less Brent	9.17	9.83	(0.66)
Ultra-low-sulfur diesel less Brent	10.21	12.64	(2.43)
Propylene less Brent	(6.68)	(5.94)	(0.74)
CBOB gasoline less LLS	9.32	11.09	(1.77)
Ultra-low-sulfur diesel less LLS	10.36	13.90	(3.54)
Propylene less LLS	(6.53)	(4.68)	(1.85)
U.S. Mid-Continent:			
CBOB gasoline less WTI	11.82	17.59	(5.77)
Ultra-low-sulfur diesel less WTI	13.03	19.02	(5.99)
North Atlantic:			
CBOB gasoline less Brent	11.99	12.85	(0.86)
Ultra-low-sulfur diesel less Brent	11.57	16.05	(4.48)
U.S. West Coast:			
CARBOB 87 gasoline less ANS	17.04	25.56	(8.52)
CARB diesel less ANS	14.52	16.90	(2.38)
CARBOB 87 gasoline less WTI	17.62	29.80	(12.18)
CARB diesel less WTI	15.10	21.14	(6.04)
New York Harbor corn crush (dollars per gallon)	0.30	0.22	0.08

The following notes relate to references on pages 32 through 36 and pages 42 through 46.

(a) Other operating expenses reflects expenses that are not associated with our cost of sales. Other operating expenses for the year ended December 31, 2017 primarily includes costs incurred at certain of our U.S. Gulf Coast refineries and certain VLP assets due to damage associated with Hurricane Harvey.

(b) In accordance with U.S. GAAP, we are required to state our inventories at the lower of cost or market. When the market price of our inventory falls below cost, we record a lower of cost or market inventory valuation adjustment to write down the value to market. In subsequent periods, the value of our inventory is reassessed and a lower of cost or market inventory valuation adjustment is recorded to reflect the net change in the lower of cost or market inventory valuation reserve between periods. As of December 31, 2017, the market price of our inventory was above cost; therefore, we did not have a lower of cost or market inventory valuation reserve as of that date. During the year ended December 31, 2016, we recorded a change in our inventory valuation reserve that was established on December 31, 2015, resulting in a noncash benefit of $747 million, of which $697 million and $50 million were attributable to our refining segment and ethanol segment, respectively. The year ended December 31, 2015 includes a lower of cost or market inventory valuation adjustment that resulted in a noncash charge of $790 million, of which $740 million and $50 million were attributable to our refining segment and ethanol segment, respectively. The noncash benefit for the year ended December 31, 2016 differs from the noncash charge for the year ended December 31, 2015 due to the foreign currency effect of inventories held by our international operations.

(c) Effective October 1, 2016, we (i) transferred ownership of all of our assets in Aruba, other than certain hydrocarbon inventories and working capital, to Refineria di Aruba N.V. (RDA), an entity wholly-owned by the Government of Aruba (GOA), (ii) settled our obligations under various agreements with the GOA, including agreements that required us to dismantle our leasehold improvements under certain conditions, and (iii) sold the working capital of our Aruba operations, including hydrocarbon inventories, to the GOA, CITGO Aruba Refining N.V. (CAR), and CITGO Petroleum Corporation (together with CAR and certain other affiliates, collectively, CITGO). We refer to this transaction as the “Aruba Disposition.”

In June 2016, we recognized an asset impairment loss of $56 million representing all of the remaining carrying value of the long-lived assets of our crude oil and refined petroleum products terminal and transshipment facility in Aruba (collectively, the Aruba Terminal). We recognized the impairment loss at that time because we concluded that it was more likely than not that we would ultimately transfer ownership of these assets to the GOA as a result of agreements entered into in June 2016 between the GOA and CITGO for the GOA’s lease of those assets to CITGO.

In September 2016 and in connection with the Aruba Disposition, our U.S. subsidiaries cancelled all outstanding debt obligations owed to them by our Aruba subsidiaries, which resulted in the recognition by us of an income tax benefit of $42 million during the year ended December 31, 2016.

(d) We use certain financial measures (as noted below) that are not defined under U.S. GAAP and are considered to be non-GAAP measures.

We have defined these non-GAAP measures and believe they are useful to the external users of our financial statements, including industry analysts, investors, lenders, and rating agencies. We believe these measures are useful to assess our ongoing financial performance because, when reconciled to their most comparable U.S. GAAP measures, they provide improved comparability between periods through the exclusion of certain items that we believe are not indicative of our core operating performance and that may obscure our underlying business results and trends. These non-GAAP measures should not be considered as alternatives to their most comparable U.S. GAAP measures nor should they be considered in isolation or as a substitute for an analysis of our results of operations as reported under U.S. GAAP. In addition, these non-GAAP measures may not be comparable to similarly titled measures used by other companies because we may define them differently, which diminishes the utility of these measures.

Non-GAAP measures are as follows:

- **Adjusted net income attributable to Valero Energy Corporation stockholders** is defined as net income attributable to Valero Energy Corporation stockholders excluding the lower of cost or market inventory valuation adjustment, its related income tax effect, the asset impairment loss, the income tax benefit on the Aruba Disposition, and the Tax Reform income tax benefit.
- **Refining and ethanol segment margins** are defined as segment operating income excluding the lower of cost or market inventory valuation adjustment, operating expenses (excluding depreciation and amortization expense), other operating expenses, depreciation and amortization expense associated with our cost of sales, and the asset impairment loss as shown below:

	Year Ended December 31,		
	2017	2016	2015
Reconciliation of refining segment operating income to refining segment margin			
Operating income	$ 4,017	$ 3,774	$ 6,881
Add back:			
Operating expenses (excluding depreciation and amortization expense)	3,917	3,696	3,689
Depreciation and amortization expense	1,800	1,734	1,699
Other operating expenses (a)	58	—	—
Lower of cost or market inventory valuation adjustment (b)	—	(697)	740
Asset impairment loss (c)	—	56	—
Refining segment margin	$ 9,792	$ 8,563	$ 13,009

	Year Ended December 31,		
	2017	2016	2015
Reconciliation of ethanol segment operating income to ethanol segment margin			
Operating income	$ 172	$ 340	$ 142
Add back:			
Operating expenses (excluding depreciation and amortization expense)	443	415	448
Depreciation and amortization expense	81	66	50
Lower of cost or market inventory valuation adjustment (b)	—	(50)	50
Ethanol segment margin	$ 696	$ 771	$ 690

- **Adjusted refining segment operating income** is defined as refining segment operating income excluding other operating expenses, the lower of cost or market inventory valuation adjustment, and the asset impairment loss.
- **Adjusted ethanol segment operating income** is defined as ethanol segment operating income excluding the lower of cost or market inventory valuation adjustment.
- **Adjusted VLP segment operating income** is defined as VLP segment operating income excluding other operating expenses.

(e) On December 22, 2017, Tax Reform was enacted, resulting in the remeasurement of our U.S. deferred taxes and the recognition of a liability for taxes on the deemed repatriation of our foreign earnings and profits. Under

U.S. GAAP, we are required to recognize the effect of Tax Reform in the period of enactment. As a result, we recognized a $1.9 billion income tax benefit in December 2017, which represents the estimated impact of Tax Reform. This estimate may be refined in future periods as further information becomes available.

(f) Other products primarily include petrochemicals, gas oils, No. 6 fuel oil, petroleum coke, sulfur, and asphalt.

(g) All per barrel of throughput and per gallon of production amounts are calculated by dividing the associated dollar amount by the throughput volumes, production volumes, pipeline transportation throughput volumes, or terminaling throughput volumes for the period, as applicable.

Throughput volumes, production volumes, pipeline transportation throughput volumes, and terminaling throughput volumes are calculated by multiplying throughput volumes per day, production volumes per day, pipeline transportation throughput volumes per day, and terminaling throughput volumes per day by the number of days in the applicable period.

(h) Adjusted operating income per barrel represents adjusted operating income (defined in (d) above) for our refining segment divided by the respective throughput volumes. Ethanol segment margin per gallon of production represents ethanol segment margin (as defined in (d) above) for our ethanol segment divided by production volumes. Pipeline transportation revenue per barrel and terminaling revenue per barrel represent pipeline transportation revenue and terminaling revenue for our VLP segment divided by pipeline transportation throughput and terminaling throughput volumes, respectively. Throughput and production volumes are calculated by multiplying throughput and production volumes per day (as provided in the accompanying tables) by the number of days in the applicable period.

Total Company, Corporate, and Other

Operating revenues decreased $12.1 billion in 2016 compared to 2015 primarily due to decreases in refined petroleum products prices associated with our refining segment. This decline in operating revenues was partially offset by lower cost of materials and other and the positive effect from the lower of cost or market inventory valuation adjustments in both years, resulting in a decrease in operating income of $2.8 billion, from $6.4 billion in 2015 to $3.6 billion in 2016.

Excluding the adjustments to operating income in both years reflected in the tables on page 44, adjusted operating income was $2.9 billion in 2016 compared to $7.1 billion in 2015. Details regarding the $4.3 billion decrease in adjusted operating income between the years are discussed by segment below.

Income tax expense decreased $1.1 billion from 2015 to 2016 primarily due to lower income before income tax expense. Excluding the income tax adjustments reflected in the table on page 44 from both years, the effective tax rate for 2016 was 26 percent compared to 30 percent in 2015. The effective tax rates are lower than the U.S. statutory rate of 35 percent primarily because income from our international operations was taxed at statutory rates that were lower than in the U.S. The effective tax rate in 2016 was lower than the 2015 rate due to a benefit of $35 million resulting from the favorable resolution of an income tax audit.

Refining Segment Results

Refining segment operating revenues decreased $12.6 billion and cost of materials and other decreased $8.1 billion in 2016 compared to 2015 primarily due to decreases in refined petroleum product prices and crude oil feedstock costs, respectively. The resulting $4.4 billion decrease in refining segment margin was partially offset by the positive effect from the lower of cost or market inventory valuation adjustments in both years, resulting in a decrease in operating income of $3.1 billion, from $6.9 billion in 2015 to $3.8 billion in 2016.

Excluding the adjustments reflected in the tables on page 44 from operating income in both years, adjusted operating income was $3.1 billion in 2016 compared to $7.6 billion in 2015, a decrease of $4.5 billion. The components of this decrease are outlined below, along with the reasons for the changes in these components between the years.

Refining segment margin decreased $4.4 billion in 2016 compared to 2015, as previously noted, primarily due to the following:

- *Decrease in gasoline margins.* We experienced a decrease in gasoline margins throughout all our regions in 2016 compared to 2015. For example, the WTI-based benchmark reference margin for U.S. Mid-Continent CBOB gasoline was $11.82 per barrel in 2016 compared to $17.59 per barrel in 2015, representing an unfavorable decrease of $5.77 per barrel. Another example is the ANS-based reference margin for U.S. West Coast CARBOB 87 gasoline, which was $17.04 per barrel in 2016 compared to $25.56 per barrel in 2015, representing an unfavorable decrease of $8.52 per barrel. We estimate that the decrease in gasoline margins per barrel in 2016 compared to 2015 had an unfavorable impact to our refining segment margin of approximately $1.7 billion.

- *Decrease in distillate margins.* We also experienced a decrease in distillate margins throughout all our regions in 2016 compared to 2015. For example, the Brent-based benchmark reference margin for U.S. Gulf Coast ultra-low-sulfur diesel was $10.21 per barrel in 2016 compared to $12.64 per barrel in 2015, representing an unfavorable decrease of $2.43 per barrel. Another example is the WTI-based benchmark reference margin for U.S. Mid-Continent ultra-low-sulfur diesel that was $13.03 per barrel in 2016 compared to $19.02 per barrel in 2015, representing an unfavorable decrease of $5.99 per barrel. We estimate that the decrease in distillate margins per barrel in 2016 compared to 2015 had an unfavorable impact to our refining segment margin of approximately $1.6 billion.

- *Lower discounts on light sweet and sour crude oils.* The market prices for refined petroleum products generally track the price of Brent crude oil, which is a benchmark sweet crude oil, and we benefit when we process crude oils that are priced at a discount to Brent crude oil. During 2016, we benefited from processing WTI crude oil (a type of sweet crude oil), however, that benefit declined compared to 2015. For example, WTI crude oil processed in our U.S. Mid-Continent region sold at a discount of $1.83 per barrel to Brent crude oil in 2016 compared to a discount of $4.91 per barrel in 2015, representing an unfavorable decrease of $3.08 per barrel. Another example is Maya crude oil (a type of sour crude oil) that sold at a discount of $8.63 per barrel to Brent crude oil in 2016 compared to a discount of $9.54 per barrel in 2015, representing an unfavorable decrease of $0.91 per barrel. We estimate that the reduction in the discounts for light sweet crude oils and sour crude oils that we processed in 2016 had an unfavorable impact to our refining segment margin of approximately $900 million.

- *Higher costs of biofuel credits.* As more fully described in Note 19 of Notes to Consolidated Financial Statements, we must purchase biofuel credits in order to meet our biofuel blending obligation under various government and regulatory compliance programs, and the cost of these credits (primarily RINs in the U.S.) increased by $309 million from $440 million in 2015 to $749 million in 2016.

- *Increase in charges from VLP.* Charges from the VLP segment for transportation and terminaling services increased $119 million in 2016 compared to 2015 primarily due to additional services provided to the refining segment using terminals acquired by VLP in 2015 and 2016. The increase in charges from VLP are more fully discussed in the VLP segment analysis below.

- *Higher throughput volumes*. Refining throughput volumes increased by 56,000 BPD in 2016. We estimate that the increase in refining throughput volumes had a positive impact on our refining segment margin of approximately $175 million.

Refining segment depreciation and amortization expense associated with our cost of sales increased $35 million primarily due to an increase in refinery turnaround and catalyst amortization expense resulting from the completion of turnaround projects at several of our refineries in 2016.

Ethanol Segment Results

Ethanol segment operating revenues increased $467 million and cost of materials and other increased $386 million in 2016 compared to 2015 primarily due to an increase in ethanol production and sales volumes. The resulting $81 million increase in ethanol segment margin, along with the positive effect from the lower of cost or market inventory valuation adjustments in both years, resulted in an increase in operating income of $198 million, from $142 million in 2015 to $340 million in 2016.

Excluding the adjustments reflected in the tables on page 44 from both years, adjusted operating income was $290 million in 2016 compared to $192 million in 2015, an increase of $98 million. The components of this increase are outlined below, along with the reasons for the changes in these components between the years.

Ethanol segment margin increased $81 million in 2016 compared to 2015, as previously noted, primarily due to the following:

- *Lower corn prices.* Corn prices were lower in 2016 compared to 2015 primarily due to higher yields from the corn crop in the corn-producing regions of the U.S. Mid-Continent in 2016. For example, the CBOT corn price was $3.58 per bushel in 2016 compared to $3.77 per bushel in 2015. We estimate that the decrease in the price of corn that we processed during 2016 had a favorable impact to our ethanol segment margin of approximately $105 million.

- *Higher ethanol prices.* Ethanol prices were slightly higher in 2016 compared to 2015 primarily due to increased ethanol demand. Despite higher domestic production during 2016, inventory levels declined during the year primarily due to higher exports. For example, the New York Harbor ethanol price was $1.60 per gallon in 2016 compared to $1.59 per gallon in 2015. We estimate that the increase in the price of ethanol per gallon in 2016 had a favorable impact to our ethanol segment margin of approximately $24 million.

- *Higher production volumes.* Ethanol segment margin was favorably impacted by increased production volumes of 15,000 gallons per day in 2016 compared to 2015 primarily due to improved operating efficiencies and mechanical reliability. We estimate that the increase in production volumes had a favorable impact to our ethanol segment margin of approximately $22 million.

- *Lower co-product prices*. A decrease in export demand for corn related co-products, primarily distillers grains, had an unfavorable effect on the prices we received. We estimate that the decrease in corn related co-product prices had an unfavorable impact to our ethanol segment margin of approximately $70 million.

Ethanol segment operating expenses (excluding depreciation and amortization expense) decreased $33 million primarily due to a $14 million decrease in energy costs related to lower natural gas prices ($2.46 per MMBtu in 2016 compared to $2.58 per MMBtu in 2015) and a $15 million decrease in chemical costs.

Ethanol segment depreciation and amortization expense associated with our cost of sales increased $16 million primarily due to a $10 million gain on the sale of certain plant assets in 2015 that was reflected in depreciation and amortization expense thereby reducing depreciation and amortization expense in 2015.

VLP Segment Results

VLP segment operating revenues increased $119 million in 2016 compared to 2015 primarily due to incremental revenues generated from transportation and terminaling services provided to our refining segment associated with terminals acquired in 2015 and 2016. This increase in VLP segment revenues, along with a decrease in operating expenses (excluding depreciation and amortization expense) between the years, resulted in an increase in operating income of $129 million, from $92 million in 2015 to $221 million in 2016. The components of this increase are outlined below, along with the reasons for the changes in these components between the years.

VLP revenues increased $119 million in 2016 compared to 2015, as previously noted, primarily due to the following:

- *Incremental throughput from acquired businesses.* VLP generated incremental terminaling revenues of $124 million from services provided to the refining segment by the McKee , Meraux, and Three

Rivers terminals, which were acquired by VLP in 2016, and the St. Charles, Houston, and Corpus Christi terminals which were acquired by VLP in 2015.

- *Lower throughput at systems owned or acquired prior to 2015.* VLP experienced a decrease in throughput volumes, primarily at the Port Arthur logistics system as a result of planned turnaround activity at the Port Arthur Refinery and at the McKee crude system as a result of decreased crude oil production in the Texas panhandle. The decrease in throughput volumes at these systems had an unfavorable impact to VLP's operating revenues of $5 million.

VLP segment operating expenses (excluding depreciation and amortization expense) decreased $10 million primarily due to lower maintenance expense at the Corpus Christi terminal related to inspection activity in 2015.

LIQUIDITY AND CAPITAL RESOURCES

Cash Flows for the Year Ended December 31, 2017

Our operations generated $5.5 billion of cash in 2017. Net income of $4.2 billion, net of the $1.9 billion noncash benefit from Tax Reform and other noncash charges of $2.1 billion, and a positive change in working capital of $1.3 billion were the primary drivers of the cash generated by our operations in 2017. Other noncash charges included $2.0 billion of depreciation and amortization expense. (See "RESULTS OF OPERATIONS" for further discussion of our operations.) The Tax Reform benefit and the change in our working capital are further detailed in Notes 14 and 17, respectively, of Notes to Consolidated Financial Statements. The source of cash resulting from the $1.3 billion change in working capital was mainly due to:

- an increase in accounts payable, partially offset by an increase in receivables, primarily as a result of an increase in commodity prices;
- an increase in income taxes payable resulting from deferring the payment of our fourth quarter 2017 estimated taxes to January 2018, as allowed by tax relief authorization from the IRS; and
- an increase in inventory due to higher volumes held combined with an increase in commodity prices.

The $5.5 billion of cash generated by our operations, along with borrowings of $380 million under a $750 million senior unsecured revolving credit facility (the VLP Revolver) as discussed in Note 8 of Notes to Consolidated Financial Statements, were used mainly to:

- fund $2.3 billion in capital investments,which include capital expenditures, deferred turnaround and catalyst costs, and investments in joint ventures;
- acquire an undivided interest in crude system assets for $72 million;
- purchase common stock for treasury of $1.4 billion;
- pay common stock dividends of $1.2 billion;
- pay distributions to noncontrolling interests of $67 million; and
- increase available cash on hand by $1.0 billion.

Cash Flows for the Year Ended December 31, 2016

Our operations generated $4.8 billion of cash in 2016, driven primarily by net income of $2.4 billion, net noncash charges to income of $1.4 billion, and positive change in working capital of $976 million. Noncash charges included $1.9 billion of depreciation and amortization expense, $56 million for the asset impairment loss associated with our Aruba Terminal, and $230 million of deferred income tax expense, partially offset by a benefit of $747 million from a lower of cost or market inventory valuation adjustment. (See "RESULTS OF OPERATIONS" for further discussion of our operations.) The change in our working capital is further detailed in Note 17 of Notes to Consolidated Financial Statements. The source of cash resulting from the $976 million change in working capital was mainly due to:

- an increase in accounts payable, offset by an increase in receivables, primarily as a result of higher commodity prices;
- a reduction of our inventories; and
- a reduction in prepaid expenses and other related to income taxes receivable due to utilization in 2016 of our 2015 overpayment of taxes.

The $4.8 billion of cash generated by our operations, along with $2.2 billion in proceeds from the issuance of debt (including $1.25 billion of 3.4 percent Senior Notes due September 15, 2026, $500 million of 4.375 percent Senior Notes due December 15, 2026 issued by VLP, and borrowings under the VLP Revolver of $349 million as discussed in Note 8 of Notes to Consolidated Financial Statements), were used mainly to:

- fund $2.0 billion in capital investments, which include capital expenditures, deferred turnaround and catalyst costs, and investments in joint ventures;
- redeem our 6.125 percent Senior Notes for $778 million (or 103.70 percent of stated value) and our 7.2 percent Senior Notes for $213 million (or 106.27 percent of stated value);
- make payments on debt and capital lease obligations of $525 million, of which $494 million related to borrowings under the VLP Revolver, $9 million related to capital lease obligations, and $22 million related to other non-bank debt;
- pay off a long-term liability of $137 million owed to a joint venture partner for an owner-method joint venture investment;
- purchase common stock for treasury of $1.3 billion;
- pay common stock dividends of $1.1 billion;
- pay distributions to noncontrolling interests of $65 million; and
- increase available cash on hand by $702 million.

Cash Flows for the Year Ended December 31, 2015
Our operations generated $5.6 billion of cash in 2015, driven primarily by net income of $4.1 billion and noncash charges to income of $2.8 billion. Noncash charges included $1.8 billion of depreciation and amortization expense, $790 million from a lower of cost or market inventory valuation adjustment, and $165 million of deferred income tax expense. (See “RESULTS OF OPERATIONS” for further discussion of our operations.) However, the change in our working capital during the year had a negative impact to cash generated by our operations of $1.3 billion as shown in Note 17 of Notes to Consolidated Financial Statements. This use of cash mainly resulted from:

- a decrease in accounts payable, net of a decrease in receivables, primarily as a result of a decrease in commodity prices from December 2014 to December 2015;
- an increase in prepaid expenses and other related to income taxes receivable and a decrease in income taxes payable due to tax payments associated with the settlement of several IRS audits and an overpayment of taxes in 2015. This overpayment resulted from a change in the U.S. Federal tax laws late in the year that reinstated the bonus depreciation deduction, which lowered our current income tax expense; and
- an increase in inventories, mainly due to the build in inventory volumes from 2015 as we purchased crude oil at prices we deemed favorable during the fourth quarter of 2015.

The $5.6 billion of cash generated by our operations, along with (i) $1.45 billion in proceeds from the issuance of debt and (ii) net proceeds of $189 million from VLP's public offering of 4,250,000 common units as discussed in Note 10 of Notes to Consolidated Financial Statements, were used mainly to:

- fund $2.4 billion in capital investments, which include capital expenditures, deferred turnaround and catalyst costs, and investments in joint ventures;
- make payments on debt and capital lease obligations of $513 million, of which $400 million related to our 4.5 percent Senior Notes, $75 million related to our 8.75 percent debentures, $25 million related to the VLP Revolver, $10 million related to capital lease obligations, and $3 million related to other non-bank debt;
- purchase common stock for treasury of $2.8 billion;
- pay common stock dividends of $848 million; and
- increase available cash on hand by $425 million.

Capital Investments

We define capital investments as capital expenditures for purchases of, additions to, and improvements in our property, plant, and equipment, and turnaround and catalyst costs; and investments in joint ventures.

Our operations, especially those of our refining segment, are highly capital intensive. Each of our refineries comprises a large base of property assets, consisting of a series of interconnected, highly integrated and interdependent crude oil processing facilities and supporting logistical infrastructure (Units), and these Units are improved continuously. The cost of improvements, which consist of the addition of new Units and betterments of existing Units, can be significant. We have historically acquired our refineries at amounts significantly below their replacement costs, whereas our improvements are made at full replacement value. As such, the costs for improving our refinery assets increase over time and are significant in relation to the amounts we paid to acquire our refineries. We plan for these improvements by developing a multi-year capital program that is updated and revised based on changing internal and external factors.

We make improvements to our refineries in order to maintain and enhance their operating reliability, to meet environmental obligations with respect to reducing emissions and removing prohibited elements from the products we produce, or to enhance their profitability. Reliability and environmental improvements generally do not increase the throughput capacities of our refineries. Improvements that enhance refinery profitability may increase throughput capacity, but many of these improvements allow our refineries to process different types of crude oil and to refine crude oil into products with higher market values. Therefore, many of our improvements do not increase throughput capacity significantly.

For 2018, we expect to incur approximately $2.7 billion for capital investments, but we continuously evaluate our capital budget and make changes as conditions warrant. This capital investment estimate excludes potential strategic acquisitions, including acquisitions of undivided interests.

We consolidate the financial statements of VIEs if we are the primary beneficiary of their operations, even though we may have no ownership interest in them. Because we consolidate the financial statements of these entities, our financial statements reflect the capital expenditures they make. Our statements of cash flows separately reflect the capital expenditures made by these entities (along with an equal offset of these amounts included in contributions from noncontrolling interests within financing activities) and these expenditures are not included in our $2.7 billion estimate of 2018 capital investments. See Note 11 of Notes to Consolidated Financial Statements for a description of our VIEs.

Contractual Obligations

Our contractual obligations as of December 31, 2017 are summarized below (in millions).

	Payments Due by Year						
	2018	2019	2020	2021	2022	Thereafter	Total
Debt and capital lease obligations (a)	$ 161	$ 811	$ 1,319	$ 58	$ 60	$ 7,212	$ 9,621
Operating lease obligations	359	236	148	104	74	366	1,287
Purchase obligations	18,582	2,375	1,697	1,271	1,209	5,091	30,225
Other long-term liabilities	—	198	219	159	188	1,965	2,729
Total	$ 19,102	$ 3,620	$ 3,383	$ 1,592	$ 1,531	$ 14,634	$ 43,862

(a) Debt obligations exclude amounts related to unamortized discounts and debt issuance costs. Capital lease obligations include related interest expense. Our debt and capital lease obligations are further described in Note 8 of Notes to Consolidated Financial Statements.

Debt and Capital Lease Obligations

Our debt and capital lease obligations are described in Note 8 of Notes to Consolidated Financial Statements.

Our debt and financing agreements do not have rating agency triggers that would automatically require us to post additional collateral. However, in the event of certain downgrades of our senior unsecured debt by the ratings agencies, the cost of borrowings under some of our bank credit facilities and other arrangements would increase. All of our ratings on our senior unsecured debt are at or above investment grade level as follows:

	Rating	
Rating Agency	Valero	VLP
Moody’s Investors Service	Baa2 (stable outlook)	Baa3 (stable outlook)
Standard & Poor’s Ratings Services	BBB (stable outlook)	BBB- (stable outlook)
Fitch Ratings	BBB (stable outlook)	BBB- (stable outlook)

We cannot provide assurance that these ratings will remain in effect for any given period of time or that one or more of these ratings will not be lowered or withdrawn entirely by a rating agency. We note that these credit ratings are not recommendations to buy, sell, or hold our securities. Each rating should be evaluated independently of any other rating. Any future reduction below investment grade or withdrawal of one or more of our credit ratings could have a material adverse impact on our ability to obtain short- and long-term financing and the cost of such financings.

Operating Lease Obligations

Our operating lease obligations include leases for land, office facilities and equipment, transportation equipment, time charters for ocean-going tankers and coastal vessels, dock facilities, and various facilities and equipment used in the storage, transportation, production, and sale of refinery feedstocks, refined petroleum products, and corn inventories. Operating lease obligations include all operating leases that have initial or remaining noncancelable terms in excess of one year, and are not reduced by minimum rentals to be received by us under subleases.

Purchase Obligations

A purchase obligation is an enforceable and legally binding agreement to purchase goods or services that specifies significant terms, including (i) fixed or minimum quantities to be purchased, (ii) fixed, minimum, or variable price provisions, and (iii) the approximate timing of the transaction. We have various purchase obligations including industrial gas and chemical supply arrangements (such as hydrogen supply arrangements), crude oil and other feedstock supply arrangements, and various throughput and terminaling agreements. We enter into these contracts to ensure an adequate supply of utilities and feedstock and adequate storage capacity to operate our refineries. Substantially all of our purchase obligations are based on market prices or adjustments based on market indices. Certain of these purchase obligations include fixed or minimum volume requirements, while others are based on our usage requirements. The purchase obligation amounts shown in the preceding table include both short- and long-term obligations and are based on (a) fixed or minimum quantities to be purchased and (b) fixed or estimated prices to be paid based on current market conditions.

Other Long-term Liabilities

Our other long-term liabilities are described in Note 7 of Notes to Consolidated Financial Statements. For purposes of reflecting amounts for other long-term liabilities in the preceding table, we made our best estimate of expected payments for each type of liability based on information available as of December 31, 2017.

Summary of Credit Facilities

Information about our outstanding borrowings, letters of credit issued, and availability under our credit facilities is reflected in Note 8 of Notes to Consolidated Financial Statements.

Off-Balance Sheet Arrangements

We have not entered into any transactions, agreements, or other contractual arrangements that would result in off-balance sheet liabilities.

Other Matters Impacting Liquidity and Capital Resources

Stock Purchase Programs

On September 21, 2016, our board of directors authorized our purchase of up to an additional $2.5 billion of our outstanding common stock with no expiration date. This authorization was in addition to the remaining amount available under the 2015 program. During the first quarter of 2017, we completed our purchases under the 2015 program. As of December 31, 2017, we had $1.2 billion remaining available for purchase under the 2016 program. We have no obligation to make purchases under this program.

On January 23, 2018, our board of directors authorized our purchase of up to an additional $2.5 billion of our outstanding common stock with no expiration date.

Pension Plan Funding

We plan to contribute approximately $131 million to our pension plans, including discretionary contributions of $100 million, and $19 million to our other postretirement benefit plans during 2018.

Environmental Matters

Our operations are subject to extensive environmental regulations by governmental authorities relating to the discharge of materials into the environment, waste management, pollution prevention measures, GHG emissions, and characteristics and composition of gasolines and distillates. Because environmental laws and regulations are becoming more complex and stringent and new environmental laws and regulations are continuously being enacted or proposed, the level of future expenditures required for environmental matters could increase in the future. In addition, any major upgrades in any of our operating facilities could require material additional expenditures to comply with environmental laws and regulations. See Notes 7 and 9 of Notes to Consolidated Financial Statements for a further discussion of our environmental matters.

Tax Matters

The IRS has ongoing audits related to our U.S. federal income tax returns from 2010 through 2015, and we have received Revenue Agent Reports (RARs) in connection with the 2010 and 2011 audit. We are contesting certain tax positions and assertions included in the RARs and continue to make progress in resolving certain of these matters with the IRS. We believe that the ultimate settlement of these audits will not be material to our financial position, results of operations, or liquidity.

Cash Held by Our International Subsidiaries

In conjunction with our implementation of the provisions under Tax Reform, which was enacted on December 22, 2017 and is more fully described in Note 14 of Notes to Consolidated Financial Statements, we recorded a liability in 2017 for the estimated U.S. federal tax due on the deemed repatriation of the accumulated earnings and profits of our international subsidiaries not previously distributed to us, and we will pay this liability over the eight-year period permitted by the provisions under Tax Reform. Because of the deemed repatriation of these accumulated earnings and profits, there are no longer any U.S. federal income tax consequences associated with the repatriation of any of the $3.2 billion of cash and temporary cash investments held by our international subsidiaries as of December 31, 2017. However, certain countries in which our international subsidiaries are organized impose withholding taxes on cash distributed outside of those countries. We have accrued for withholding taxes on a portion of the cash held by one of our international subsidiaries that we have deemed to not be permanently reinvested in our operations in that country.

Cash provided by operating activities in the U.S. continues to be our primary source of funds to finance our U.S. operations and capital expenditures, as well as our dividends and share repurchases.

Concentration of Customers

Our operations have a concentration of customers in the refining industry and customers who are refined petroleum product wholesalers and retailers. These concentrations of customers may impact our overall exposure to credit risk, either positively or negatively, in that these customers may be similarly affected by changes in economic or other conditions. However, we believe that our portfolio of accounts receivable is sufficiently diversified to the extent necessary to minimize potential credit risk. Historically, we have not had any significant problems collecting our accounts receivable.

Sources of Liquidity

We believe that we have sufficient funds from operations and, to the extent necessary, from borrowings under our credit facilities, to fund our ongoing operating requirements. We expect that, to the extent necessary, we can raise additional funds from time to time through equity or debt financings in the public and private capital markets or the arrangement of additional credit facilities. However, there can be no assurances regarding the availability of any future financings or additional credit facilities or whether such financings or additional credit facilities can be made available on terms that are acceptable to us.

NEW ACCOUNTING PRONOUNCEMENTS

As discussed in Note 1 of Notes to Consolidated Financial Statements, certain new financial accounting pronouncements became effective January 1, 2018, or will become effective in the future. The effect on our financial statements upon adoption of these pronouncements is discussed in the above-referenced note.

CRITICAL ACCOUNTING POLICIES INVOLVING CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements in accordance with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates. The following summary provides further information about our critical accounting policies that involve critical accounting estimates, and should be read in conjunction with Note 1 of Notes to Consolidated Financial Statements, which summarizes our significant accounting policies. The following accounting policies involve estimates that are considered critical due to the level of subjectivity and judgment involved, as well as the impact on our financial position and results of operations. We believe that all of our estimates are reasonable. Unless otherwise noted, estimates of the sensitivity to earnings that would result from changes in the assumptions used in determining our estimates is not practicable due to the number of assumptions and contingencies involved, and the wide range of possible outcomes.

Inventory Valuation

The cost of our inventories is principally determined under the last-in, first-out (LIFO) method using the dollar-value LIFO approach. Our LIFO inventories are carried at the lower of cost or market value and our non-LIFO inventories are carried at the lower of cost or net realizable value. The market value of our LIFO inventories is determined based on the net realizable value of the inventories.

We compare the market value of inventories to their cost on an aggregate basis, excluding materials and supplies. In determining the market value of our inventories, we assume our refinery and ethanol feedstocks are converted into refined products, which requires us to make estimates regarding the refined products expected to be produced from those feedstocks and the conversion costs required to convert those feedstocks into refined products. We also estimate the usual and customary transportation costs required to move the inventory from our refineries and ethanol plants to the appropriate points of sale. We then apply an estimated selling price to our inventories. If the aggregate market value is less than cost, we recognize a loss for the difference in our statements of income.

The lower of cost or market inventory valuation adjustments for the years ended December 31, 2016 and 2015 are discussed in Note 4 of Notes to Consolidated Financial Statements.

Environmental Matters

Our operations are subject to extensive environmental regulations by governmental authorities relating primarily to the discharge of materials into the environment, waste management, and pollution prevention measures. Future legislative action and regulatory initiatives, as discussed in Note 9 of Notes to Consolidated Financial Statements, could result in changes to required operating permits, additional remedial actions, or increased capital expenditures and operating costs that cannot be assessed with certainty at this time.

Accruals for environmental liabilities are based on best estimates of probable undiscounted future costs over a 20-year time period using currently available technology and applying current regulations, as well as our own internal environmental policies. However, environmental liabilities are difficult to assess and estimate due to uncertainties related to the magnitude of possible remediation, the timing of such remediation, and the determination of our obligation in proportion to other parties. Such estimates are subject to change due to many factors, including the identification of new sites requiring remediation, changes in environmental laws and regulations and their interpretation, additional information related to the extent and nature of remediation efforts, and potential improvements in remediation technologies.

The amount of our accruals for environmental matters as of December 31, 2017 and 2016 are included in Note 7 of Notes to Consolidated Financial Statements.

Pension and Other Postretirement Benefit Obligations

We have significant pension and other postretirement benefit liabilities and costs that are developed from actuarial valuations. Inherent in these valuations are key assumptions including discount rates, expected return on plan assets, future compensation increases, and health care cost trend rates. These assumptions are disclosed and described in Note 12 of Notes to Consolidated Financial Statements. Changes in these assumptions are primarily influenced by factors outside of our control. For example, the discount rate assumption represents a yield curve comprised of various long-term bonds that have an average rating of double-A when averaging all available ratings by the recognized rating agencies, while the expected return on plan assets is based on a compounded return calculated assuming an asset allocation that is representative of the asset mix in our pension plans. To determine the expected return on plan assets, we utilized a forward-looking model of asset returns. The historical geometric average return over the 10 years prior to December 31, 2017 was 6.29 percent. The actual return on assets for the years ended December 31, 2017, 2016, and 2015 was 19.31 percent, 7.77 percent, and 1.46 percent, respectively. These assumptions can have a significant effect on the amounts reported in our financial statements. For example, a 0.25 percent decrease in the assumptions related to the discount rate or expected return on plan assets or a 0.25 percent increase in the assumptions related to the health care cost trend rate or rate of compensation increase would have the following effects on the projected benefit obligation as of December 31, 2017 and net periodic benefit cost for the year ending December 31, 2018 (in millions):

	Pension Benefits	Other Postretirement Benefits
Increase in projected benefit obligation resulting from:		
Discount rate decrease	$ 129	$ 9
Compensation rate increase	15	n/a
Health care cost trend rate increase	n/a	1
Increase in expense resulting from:		
Discount rate decrease	12	1
Expected return on plan assets decrease	6	n/a
Compensation rate increase	4	n/a
Health care cost trend rate increase	n/a	—

Beginning in 2016, our net periodic benefit cost is determined using the spot-rate approach. Under this approach, our net periodic benefit cost is impacted by the spot rates of the corporate bond yield curve used to calculate our liability discount rate. If the yield curve were to flatten entirely and our liability discount rate remained unchanged, our net periodic benefit cost would increase by $12 million for pension benefits and $2 million for other postretirement benefits in 2018.

See Note 12 of Notes to Consolidated Financial Statements for a further discussion of our pension and other postretirement benefit obligations.

Tax Matters

We record tax liabilities based on our assessment of existing tax laws and regulations. A contingent loss related to an indirect tax (excise/duty, sales/use, gross receipts, and/or value-added tax) claim is recorded if the loss is both probable and reasonably estimable. The recording of our tax liabilities requires significant judgments and estimates. Actual tax liabilities can vary from our estimates for a variety of reasons, including different interpretations of tax laws and regulations and different determinations of the amount of tax due, including penalties and interest. In addition, in determining our income tax provision, we must assess the likelihood that our deferred tax assets, primarily consisting of net operating loss and tax credit carryforwards, will be recovered through future taxable income. Judgment is required in estimating the amount of a valuation allowance, if any, that should be recorded against those deferred income tax assets. If our actual results of operations differ from such estimates or our estimates of future taxable income change, the valuation allowance may need to be revised.

In addition, because of the significant and complex changes to the Code from Tax Reform, including the need for regulatory guidance from the IRS to properly account for many of the changes, we recorded income taxes for items where reasonable estimates could be made and we applied the Code on a pre-Tax Reform basis for items where reasonable estimates could not be made, as permitted by Staff Accounting Bulletin No. 118, "Income Tax Accounting Implications of the Tax Cuts and Jobs Act," issued by the SEC. As a result, we will record the effect in 2018 for items where we were unable to make a reasonable estimate in 2017, and we may revise estimates that were recorded in 2017. These amounts could be material. See Note 14 of Notes to Consolidated Financial Statements for a further discussion of our tax liabilities and the impact from Tax Reform on those liabilities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

COMMODITY PRICE RISK

We are exposed to market risks related to the volatility in the price of crude oil, refined petroleum products (primarily gasoline and distillate), grain (primarily corn), soybean oil, and natural gas used in our operations. To reduce the impact of price volatility on our results of operations and cash flows, we use commodity derivative instruments, including swaps, futures, and options to manage the volatility of:

- inventories and firm commitments to purchase inventories generally for amounts by which our current year inventory levels (determined on a LIFO basis) differ from our previous year-end LIFO inventory levels and
- forecasted feedstock and refined petroleum product purchases, refined petroleum product sales, natural gas purchases, and corn purchases to lock in the price of those forecasted transactions at existing market prices that we deem favorable.

We use the futures markets for the available liquidity, which provides greater flexibility in transacting our price risk activities. We use swaps primarily to manage our price exposure. We also enter into certain commodity derivative instruments for trading purposes to take advantage of existing market conditions related to future results of operations and cash flows.

Our positions in commodity derivative instruments are monitored and managed on a daily basis by our risk control group to ensure compliance with our stated risk management policy that has been approved by our board of directors.

The following sensitivity analysis includes all positions at the end of the reporting period with which we have market risk (in millions):

	Derivative Instruments Held For	
	Non-Trading Purposes	Trading Purposes
December 31, 2017:		
Gain (loss) in fair value resulting from:		
10% increase in underlying commodity prices	$ (47)	$ 4
10% decrease in underlying commodity prices	47	(2)
December 31, 2016:		
Gain (loss) in fair value resulting from:		
10% increase in underlying commodity prices	61	(22)
10% decrease in underlying commodity prices	(61)	11

See Note 19 of Notes to Consolidated Financial Statements for notional volumes associated with these derivative contracts as of December 31, 2017.

COMPLIANCE PROGRAM PRICE RISK

We are exposed to market risk related to the volatility in the price of biofuel credits and GHG emission credits needed to comply with various governmental and regulatory programs. To manage these risks, we enter into contracts to purchase these credits when prices are deemed favorable. Some of these contracts are derivative instruments; however, we elect the normal purchase exception and do not record these contracts at their fair values. As of December 31, 2017, there was an immaterial amount of gain or loss in the fair value of derivative instruments that would result from a 10 percent increase or decrease in the underlying price of the contracts. See Note 19 of Notes to Consolidated Financial Statements for a discussion about these compliance programs.

INTEREST RATE RISK

The following table provides information about our debt instruments (dollars in millions), the fair values of which are sensitive to changes in interest rates. Principal cash flows and related weighted-average interest rates by expected maturity dates are presented.

	December 31, 2017							
	Expected Maturity Dates							
	2018	2019	2020	2021	2022	There-after	Total (a)	Fair Value
Fixed rate	$ —	$ 750	$ 850	$ —	$ —	$ 6,224	$ 7,824	$ 9,236
Average interest rate	—%	9.4%	6.1%	—%	—%	5.6%	6.0%	
Floating rate (b)	$ 106	$ 6	$ 416	$ 6	$ 6	$ 19	$ 559	$ 559
Average interest rate	2.1%	3.8%	2.9%	3.8%	3.8%	3.8%	2.8%	

	December 31, 2016							
	Expected Maturity Dates							
	2017	2018	2019	2020	2021	There-after	Total (a)	Fair Value
Fixed rate	$ —	$ —	$ 750	$ 850	$ —	$ 6,224	$ 7,824	$ 8,701
Average interest rate	—%	—%	9.4%	6.1%	—%	5.6%	6.0%	
Floating rate (b)	$ 105	$ 5	$ 5	$ 35	$ 5	$ 26	$ 181	$ 181
Average interest rate	1.4%	3.4%	3.4%	2.5%	3.4%	3.4%	2.1%	

(a) Excludes unamortized discounts and debt issuance costs.
(b) As of December 31, 2017 and 2016, we had an interest rate swap associated with $49 million and $51 million, respectively, of our floating rate debt resulting in an effective interest rate of 3.85 percent as of each of those reporting dates. The fair value of the swap was immaterial for all periods presented.

FOREIGN CURRENCY RISK

As of December 31, 2017, we had commitments to purchase $507 million of U.S. dollars. Our market risk was minimal on these contracts, as all of them matured on or before January 31, 2018.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Our management is responsible for establishing and maintaining adequate "internal control over financial reporting" (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934) for Valero Energy Corporation. Our management evaluated the effectiveness of Valero's internal control over financial reporting as of December 31, 2017. In its evaluation, management used the criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Management believes that as of December 31, 2017, our internal control over financial reporting was effective based on those criteria.

Our independent registered public accounting firm has issued an attestation report on the effectiveness of our internal control over financial reporting, which begins on page 67 of this report.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The board of directors and stockholders
Valero Energy Corporation and subsidiaries:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Valero Energy Corporation and subsidiaries (the Company) as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, equity, and cash flows for each of the years in the three-year period ended December 31, 2017, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the years in the three-year 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 (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 28, 2018 expressed an unqualified opinion on the effectiveness of the Company’s internal control over financial reporting.

Basis for Opinion

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

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

/s/ KPMG LLP

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

San Antonio, Texas
February 28, 2018

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The board of directors and stockholders
Valero Energy Corporation and subsidiaries:

Opinion on Internal Control Over Financial Reporting

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

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, equity, and cash flows for each of the years in the three-year period ended December 31, 2017, and the related notes (collectively, the consolidated financial statements), and our report dated February 28, 2018 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

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

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

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ KPMG LLP

San Antonio, Texas
February 28, 2018

VALERO ENERGY CORPORATION
CONSOLIDATED BALANCE SHEETS
(millions of dollars, except par value)

	December 31, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and temporary cash investments	$ 5,850	$ 4,816
Receivables, net	6,922	5,901
Inventories	6,384	5,709
Prepaid expenses and other	156	374
Total current assets	19,312	16,800
Property, plant, and equipment, at cost	40,010	37,733
Accumulated depreciation	(12,530)	(11,261)
Property, plant, and equipment, net	27,480	26,472
Deferred charges and other assets, net	3,366	2,901
Total assets	$ 50,158	$ 46,173
LIABILITIES AND EQUITY		
Current liabilities:		
Current portion of debt and capital lease obligations	$ 122	$ 115
Accounts payable	8,348	6,357
Accrued expenses	712	694
Taxes other than income taxes payable	1,321	1,084
Income taxes payable	568	78
Total current liabilities	11,071	8,328
Debt and capital lease obligations, less current portion	8,750	7,886
Deferred income tax liabilities	4,708	7,361
Other long-term liabilities	2,729	1,744
Commitments and contingencies		
Equity:		
Valero Energy Corporation stockholders’ equity:		
Common stock, $0.01 par value; 1,200,000,000 shares authorized; 673,501,593 and 673,501,593 shares issued	7	7
Additional paid-in capital	7,039	7,088
Treasury stock, at cost; 239,603,534 and 222,000,024 common shares	(13,315)	(12,027)
Retained earnings	29,200	26,366
Accumulated other comprehensive loss	(940)	(1,410)
Total Valero Energy Corporation stockholders’ equity	21,991	20,024
Noncontrolling interests	909	830
Total equity	22,900	20,854
Total liabilities and equity	$ 50,158	$ 46,173

See Notes to Consolidated Financial Statements.

VALERO ENERGY CORPORATION
CONSOLIDATED STATEMENTS OF INCOME
(millions of dollars, except per share amounts)

	Year Ended December 31,		
	2017	**2016**	**2015**
Operating revenues (a)	$ 93,980	$ 75,659	$ 87,804
Cost of sales:			
Cost of materials and other	83,037	65,962	73,861
Operating expenses (excluding depreciation and amortization expense reflected below)	4,462	4,207	4,243
Depreciation and amortization expense	1,934	1,846	1,795
Lower of cost or market inventory valuation adjustment	—	(747)	790
Total cost of sales	89,433	71,268	80,689
Other operating expenses	61	—	—
General and administrative expenses (excluding depreciation and amortization expense reflected below)	835	715	710
Depreciation and amortization expense	52	48	47
Asset impairment loss	—	56	—
Operating income	3,599	3,572	6,358
Other income, net	76	56	46
Interest and debt expense, net of capitalized interest	(468)	(446)	(433)
Income before income tax expense (benefit)	3,207	3,182	5,971
Income tax expense (benefit)	(949)	765	1,870
Net income	4,156	2,417	4,101
Less: Net income attributable to noncontrolling interests	91	128	111
Net income attributable to Valero Energy Corporation stockholders	$ 4,065	$ 2,289	$ 3,990
Earnings per common share	$ 9.17	$ 4.94	$ 8.00
Weighted-average common shares outstanding (in millions)	442	461	497
Earnings per common share – assuming dilution	$ 9.16	$ 4.94	$ 7.99
Weighted-average common shares outstanding – assuming dilution (in millions)	444	464	500
Dividends per common share	$ 2.80	$ 2.40	$ 1.70

Supplemental information:

(a) Includes excise taxes on sales by certain of our international operations	$ 5,573	$ 5,493	$ 5,980

See Notes to Consolidated Financial Statements.

VALERO ENERGY CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(millions of dollars)

	Year Ended December 31,		
	2017	**2016**	**2015**
Net income	$ 4,156	$ 2,417	$ 4,101
Other comprehensive income (loss):			
Foreign currency translation adjustment	514	(415)	(606)
Net gain (loss) on pension and other postretirement benefits	(65)	(98)	57
Other comprehensive income (loss) before income tax expense (benefit)	449	(513)	(549)
Income tax expense (benefit) related to items of other comprehensive income (loss)	(21)	(37)	17
Other comprehensive income (loss)	470	(476)	(566)
Comprehensive income	4,626	1,941	3,535
Less: Comprehensive income attributable to noncontrolling interests	91	129	111
Comprehensive income attributable to Valero Energy Corporation stockholders	$ 4,535	$ 1,812	$ 3,424

See Notes to Consolidated Financial Statements.

VALERO ENERGY CORPORATION
CONSOLIDATED STATEMENTS OF EQUITY
(millions of dollars)

	Valero Energy Corporation Stockholders' Equity							
	Common Stock	Additional Paid-in Capital	Treasury Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total	Non-controlling Interests	Total Equity
Balance as of December 31, 2014	$ 7	$ 7,116	$ (8,125)	$ 22,046	$ (367)	$ 20,677	$ 567	$ 21,244
Net income	—	—	—	3,990	—	3,990	111	4,101
Dividends on common stock	—	—	—	(848)	—	(848)	—	(848)
Stock-based compensation expense	—	59	—	—	—	59	—	59
Tax deduction in excess of stock-based compensation expense	—	44	—	—	—	44	—	44
Transactions in connection with stock-based compensation plans	—	(155)	(7)	—	—	(162)	—	(162)
Stock purchases under purchase program	—	—	(2,667)	—	—	(2,667)	—	(2,667)
Issuance of Valero Energy Partners LP common units	—	—	—	—	—	—	189	189
Contributions from noncontrolling interests	—	—	—	—	—	—	5	5
Distributions to noncontrolling interests	—	—	—	—	—	—	(45)	(45)
Other comprehensive loss	—	—	—	—	(566)	(566)	—	(566)
Balance as of December 31, 2015	7	7,064	(10,799)	25,188	(933)	20,527	827	21,354
Net income	—	—	—	2,289	—	2,289	128	2,417
Dividends on common stock	—	—	—	(1,111)	—	(1,111)	—	(1,111)
Stock-based compensation expense	—	68	—	—	—	68	—	68
Transactions in connection with stock-based compensation plans	—	(89)	34	—	—	(55)	—	(55)
Stock purchases under purchase program	—	—	(1,262)	—	—	(1,262)	—	(1,262)
Issuance of Valero Energy Partners LP common units	—	—	—	—	—	—	11	11
Distributions to noncontrolling interests	—	—	—	—	—	—	(65)	(65)
Other	—	45	—	—	—	45	(72)	(27)
Other comprehensive income (loss)	—	—	—	—	(477)	(477)	1	(476)
Balance as of December 31, 2016	7	7,088	(12,027)	26,366	(1,410)	20,024	830	20,854
Net income	—	—	—	4,065	—	4,065	91	4,156
Dividends on common stock	—	—	—	(1,242)	—	(1,242)	—	(1,242)
Stock-based compensation expense	—	68	—	—	—	68	—	68
Transactions in connection with stock-based compensation plans	—	(82)	19	—	—	(63)	—	(63)
Stock purchases under purchase program	—	—	(1,307)	—	—	(1,307)	—	(1,307)
Issuance of Valero Energy Partners LP common units	—	—	—	—	—	—	33	33
Contributions from noncontrolling interests	—	—	—	—	—	—	30	30
Distributions to noncontrolling interests	—	—	—	—	—	—	(67)	(67)
Other	—	(35)	—	11	—	(24)	(8)	(32)
Other comprehensive income	—	—	—	—	470	470	—	470
Balance as of December 31, 2017	$ 7	$ 7,039	$ (13,315)	$ 29,200	$ (940)	$ 21,991	$ 909	$ 22,900

See Notes to Consolidated Financial Statements.

VALERO ENERGY CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(millions of dollars)

	Year Ended December 31,		
	2017	2016	2015
Cash flows from operating activities:			
Net income	$ 4,156	$ 2,417	$ 4,101
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization expense	1,986	1,894	1,842
Lower of cost or market inventory valuation adjustment	—	(747)	790
Asset impairment loss	—	56	—
Deferred income tax expense (benefit)	(2,543)	230	165
Changes in current assets and current liabilities	1,289	976	(1,306)
Changes in deferred charges and credits and other operating activities, net	594	(6)	19
Net cash provided by operating activities	5,482	4,820	5,611
Cash flows from investing activities:			
Capital expenditures	(1,353)	(1,278)	(1,618)
Deferred turnaround and catalyst costs	(523)	(718)	(673)
Investments in joint ventures	(406)	(4)	(141)
Acquisition of undivided interest	(72)	—	—
Capital expenditures of certain variable interest entities	(26)	—	—
Other investing activities, net	(2)	(6)	(55)
Net cash used in investing activities	(2,382)	(2,006)	(2,487)
Cash flows from financing activities:			
Proceeds from debt issuances or borrowings	380	2,153	1,446
Repayments of debt and capital lease obligations	(21)	(1,475)	(513)
Proceeds from the exercise of stock options	10	6	34
Purchase of common stock for treasury	(1,372)	(1,336)	(2,838)
Common stock dividends	(1,242)	(1,111)	(848)
Proceeds from issuance of Valero Energy Partners LP common units	36	10	189
Contributions from noncontrolling interests	30	—	5
Distributions to noncontrolling interests	(67)	(65)	(45)
Other financing activities, net	(26)	(194)	25
Net cash used in financing activities	(2,272)	(2,012)	(2,545)
Effect of foreign exchange rate changes on cash	206	(100)	(154)
Net increase in cash and temporary cash investments	1,034	702	425
Cash and temporary cash investments at beginning of year	4,816	4,114	3,689
Cash and temporary cash investments at end of year	$ 5,850	$ 4,816	$ 4,114

See Notes to Consolidated Financial Statements.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. DESCRIPTION OF BUSINESS, BASIS OF PRESENTATION, AND SIGNIFICANT ACCOUNTING POLICIES

Description of Business

As used in this report, the terms “Valero,” “we,” “us,” or “our” refer to Valero Energy Corporation, one or more of its consolidated subsidiaries, or all of them taken as a whole.

We are an independent petroleum refiner and ethanol producer. We own 15 petroleum refineries located in the United States (U.S.), Canada, and the United Kingdom (U.K.) with a combined throughput capacity of approximately 3.1 million barrels per day as of December 31, 2017. We sell our refined petroleum products in both the wholesale rack and bulk markets, and approximately 7,400 outlets carry our brand names in the U.S., Canada, the U.K., and Ireland. Most of our logistics assets support our refining operations, and some of these assets are owned by Valero Energy Partners LP (VLP). See Note 11 for further discussion about VLP. We also own 11 ethanol plants in the Mid-Continent region of the U.S. with a combined production capacity of approximately 1.45 billion gallons per year as of December 31, 2017. We sell our ethanol in the wholesale bulk market, and some of our logistics assets support our ethanol operations.

Basis of Presentation

General

These consolidated financial statements were prepared in accordance with U.S. generally accepted accounting principles (GAAP) and with the rules and regulations of the U.S. Securities and Exchange Commission (SEC).

Reclassifications

Effective January 1, 2017, we revised our reportable segments to reflect a new reportable segment — VLP. The results of the VLP segment include the results of VLP, our majority-owned master limited partnership. Our prior period segment information has been retrospectively adjusted to reflect our current segment presentation. See Note 16 for additional information.

Certain prior year amounts have been reclassified to conform to the 2017 presentation. The changes were primarily due to the separate presentation of depreciation and amortization expense related to operating expenses and general and administrative expenses.

Significant Accounting Policies

Principles of Consolidation

These financial statements include those of Valero, our wholly owned subsidiaries, and variable interest entities (VIEs) in which we have a controlling interest. Our VIEs are described in Note 11. The ownership interests held by others in the VIEs are recorded as noncontrolling interests. Intercompany items and transactions have been eliminated in consolidation. Investments in less than wholly owned entities where we have significant influence are accounted for using the equity method.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates. On an ongoing basis, we review our estimates based on currently available information. Changes in facts and circumstances may result in revised estimates.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Temporary Cash Investments

Our temporary cash investments are highly liquid, low-risk debt instruments that have a maturity of three months or less when acquired.

Receivables

Trade receivables are carried at original invoice amount. We maintain an allowance for doubtful accounts, which is adjusted based on management's assessment of our customers' historical collection experience, known credit risks, and industry and economic conditions.

Inventories

The cost of refinery feedstocks, refined petroleum products, and grain and ethanol inventories is determined under the last-in, first-out (LIFO) method using the dollar-value LIFO approach, with any increments valued based on average purchase prices during the year. Our LIFO inventories are carried at the lower of cost or market. The cost of products purchased for resale and the cost of materials and supplies are determined principally under the weighted-average cost method. Our non-LIFO inventories are carried at the lower of cost or net realizable value. If the aggregate market value of our LIFO inventories or the aggregate net realizable value of our non-LIFO inventories is less than the related aggregate cost, we recognize a loss for the difference in our statements of income.

Property, Plant, and Equipment

The cost of property, plant, and equipment (property assets) purchased or constructed, including betterments of property assets, is capitalized. However, the cost of repairs to and normal maintenance of property assets is expensed as incurred. Betterments of property assets are those that extend the useful life, increase the capacity or improve the operating efficiency of the asset, or improve the safety of our operations. The cost of property assets constructed includes interest and certain overhead costs allocable to the construction activities.

Our operations, especially those of our refining segment, are highly capital intensive. Each of our refineries comprises a large base of property assets, consisting of a series of interconnected, highly integrated and interdependent crude oil processing facilities and supporting logistical infrastructure (Units), and these Units are continuously improved. Improvements consist of the addition of new Units and betterments of existing Units. We plan for these improvements by developing a multi-year capital program that is updated and revised based on changing internal and external factors.

Depreciation of property assets used in our refining segment is recorded on a straight-line basis over the estimated useful lives of these assets primarily using the composite method of depreciation. We maintain a separate composite group of property assets for each of our refineries. We estimate the useful life of each group based on an evaluation of the property assets comprising the group, and such evaluations consist of, but are not limited to, the physical inspection of the assets to determine their condition, consideration of the manner in which the assets are maintained, assessment of the need to replace assets, and evaluation of the manner in which improvements impact the useful life of the group. The estimated useful lives of our composite groups range primarily from 25 to 30 years.

Under the composite method of depreciation, the cost of an improvement is added to the composite group to which it relates and is depreciated over that group's estimated useful life. We design improvements to our refineries in accordance with engineering specifications, design standards, and practices accepted in our industry, and these improvements have design lives consistent with our estimated useful lives. Therefore, we believe the use of the group life to depreciate the cost of improvements made to the group is reasonable because the estimated useful life of each improvement is consistent with that of the group.

Also under the composite method of depreciation, the historical cost of a minor property asset (net of salvage value) that is retired or replaced is charged to accumulated depreciation and no gain or loss is recognized in income. However, a gain or loss is recognized in income for a major property asset that is retired, replaced, sold, or for an abnormal disposition of a property asset (primarily involuntary conversions). Gains and losses are reflected in depreciation and amortization expense, unless such amounts are reported separately due to materiality.

Depreciation of property assets used in our ethanol segment is recorded on a straight-line basis over the estimated useful lives of the related assets.

Leasehold improvements are amortized on a straight-line basis over the shorter of the lease term or the estimated useful life of the related asset. Assets acquired under capital leases are amortized on a straight-line basis over (i) the lease term if transfer of ownership does not occur at the end of the lease term or (ii) the estimated useful life of the asset if transfer of ownership does occur at the end of the lease term.

Deferred Charges and Other Assets

"Deferred charges and other assets, net" primarily include the following:

- turnaround costs, which are incurred in connection with planned major maintenance activities at our refineries and ethanol plants and which are deferred when incurred and amortized on a straight-line basis over the period of time estimated to lapse until the next turnaround occurs;
- fixed-bed catalyst costs, representing the cost of catalyst that is changed out at periodic intervals when the quality of the catalyst has deteriorated beyond its prescribed function, which are deferred when incurred and amortized on a straight-line basis over the estimated useful life of the specific catalyst;
- income taxes receivable;
- investments in joint ventures accounted for under the equity method; and
- intangible assets.

Impairment of Assets

Long-lived assets are tested for recoverability whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. A long-lived asset is not recoverable if its carrying amount exceeds the sum of the undiscounted cash flows expected to result from its use and eventual disposition. If a long-lived asset is not recoverable, an impairment loss is recognized for the amount by which the carrying amount of the long-lived asset exceeds its fair value, with fair value determined based on discounted estimated net cash flows or other appropriate methods.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

We evaluate our equity method investments for impairment when there is evidence that we may not be able to recover the carrying amount of our investments or the investee is unable to sustain an earnings capacity that justifies the carrying amount. A loss in the value of an investment that is other than a temporary decline is recognized currently in income, and is based on the difference between the estimated current fair value of the investment and its carrying amount.

Environmental Matters

Liabilities for future remediation costs are recorded when environmental assessments and/or remedial efforts are probable and the costs can be reasonably estimated. Other than for assessments, the timing and magnitude of these accruals generally are based on the completion of investigations or other studies or a commitment to a formal plan of action. Amounts recorded for environmental liabilities have not been reduced by possible recoveries from third parties and have not been measured on a discounted basis.

Asset Retirement Obligations

We record a liability, which is referred to as an asset retirement obligation, at fair value for the estimated cost to retire a tangible long-lived asset at the time we incur that liability, which is generally when the asset is purchased, constructed, or leased. We record the liability when we have a legal obligation to incur costs to retire the asset 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.

We have asset retirement obligations with respect to certain of our refinery assets due to various legal obligations to clean and/or dispose of various component parts of each refinery at the time they are retired. However, these component parts can be used for extended and indeterminate periods of time as long as they are properly maintained and/or upgraded. In addition, we have asset retirement obligations with respect to our ethanol plants and certain of our logistics assets that require us to perform under law or contract once the asset is retired from service. It is our practice and current intent to maintain all our assets and continue making improvements to those assets based on technological advances. As a result, we believe that our refineries, ethanol plants, and logistics assets have indeterminate lives for purposes of estimating asset retirement obligations because dates or ranges of dates upon which we would retire such assets cannot reasonably be estimated at this time. We will recognize a liability at such time when sufficient information exists to estimate a date or range of potential settlement dates that is needed to employ a present value technique to estimate fair value.

Foreign Currency Translation

The functional currency of each of our international operations is the respective local currency, which includes the Canadian dollar, the pound sterling, the euro, and the Mexican peso. 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 year presented. Foreign currency translation adjustments are recorded as a component of accumulated other comprehensive loss.

Revenue Recognition

Revenues for products sold by our refining and ethanol segments are recorded upon delivery and transfer of title to the products to our customers and when payment has either been received or collection is reasonably assured. Our VLP segment generates revenues by providing fee-based transportation and terminaling services

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

to transport and store crude oil and refined petroleum products using its pipelines and terminals under long-term commercial agreements. VLP segment revenues are recognized upon completion of the transportation or terminaling service. However, because VLP segment revenues are intersegment revenues with our refining segment, all VLP segment revenues are eliminated in consolidation.

We present excise taxes on sales by certain of our international operations on a gross basis in revenues. The amount of such taxes is provided in supplemental information in a footnote on the statements of income. All other excise taxes are presented on a net basis.

We enter into certain purchase and sale arrangements with the same counterparty that are deemed to be made in contemplation of one another. We combine these transactions and present the net effect in cost of materials and other. We also enter into refined petroleum product exchange transactions to fulfill sales contracts with our customers by accessing refined petroleum products in markets where we do not operate our own refineries. These refined petroleum product exchanges are accounted for as exchanges of non-monetary assets, and no revenues are recorded on these transactions.

Cost Classifications

"Cost of materials and other" primarily includes the cost of materials that are a component of our products sold. These costs include (i) the direct cost of materials (such as crude oil and other refinery feedstocks, refined petroleum products and blendstocks, and ethanol feedstocks and products) that are a component of our products sold; (ii) costs related to the delivery (such as shipping and handling costs) of products sold; (iii) costs related to our environmental credit obligations to comply with various governmental and regulatory programs (such as the cost of Renewable Identification Numbers (RINs) as required by the U.S. Environmental Protection Agency's (EPA) Renewable Fuel Standard and emission credits under various cap-and-trade systems, as defined in Note 18); (iv) gains and losses on our commodity derivative instruments; and (v) certain excise taxes.

"Operating expenses (excluding depreciation and amortization expense)" include costs to operate our refineries, ethanol plants, and logistics assets, except for depreciation and amortization expense. These costs primarily include employee-related expenses, energy and utility costs, catalysts and chemical costs, and repair and maintenance expenses.

"Depreciation and amortization expense" associated with our operations is separately presented in our statement of income as a component of cost of sales and general and administrative expenses and is disclosed by reportable segment in Note 16.

"Other operating expenses" include costs, if any, incurred by our reportable segments that are not associated with our cost of sales.

Environmental Compliance Program Costs

We purchase credits in the open market to meet our obligations under various environmental compliance programs. We purchase biofuel credits (primarily RINs in the U.S.) to comply with government regulations that require us to blend a certain percentage of biofuels into the products we produce. To the degree that we are unable to blend biofuels at the required percentage, we must purchase biofuel credits to meet our obligation. We purchase greenhouse gas (GHG) emission credits to comply with government regulations concerning various GHG emission programs, including cap-and-trade systems. These programs are further described in Note 19 under “Environmental Compliance Program Price Risk.”

The costs of purchased biofuel credits and GHG emission credits are charged to cost of materials and other as such credits are needed to satisfy our obligation. To the extent we have not purchased enough credits to satisfy our obligation as of the balance sheet date, we charge cost of materials and other for such deficiency based on the market price of the credits as of the balance sheet date, and we record a liability for our obligation to purchase those credits. See Note 18 for disclosure of our fair value liability.

Stock-Based Compensation

Compensation expense for our share-based compensation plans is based on the fair value of the awards granted and is recognized in income on a straight-line basis over the shorter of (a) the requisite service period of each award or (b) the period from the grant date to the date retirement eligibility is achieved if that date is expected to occur during the vesting period established in the award.

Income Taxes

Income taxes are accounted for under the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred amounts are measured using enacted tax rates expected to apply to taxable income in the year those temporary differences are expected to be recovered or settled. Deferred tax assets are reduced by unrecognized tax benefits, if such items may be available to offset the unrecognized tax benefit.

We have elected to classify any interest expense and penalties related to the underpayment of income taxes in income tax expense.

Earnings per Common Share

Earnings per common share is computed by dividing net income attributable to Valero stockholders by the weighted-average number of common shares outstanding for the year. Participating share-based payment awards, including shares of restricted stock granted under certain of our stock-based compensation plans, are included in the computation of basic earnings per share using the two-class method. Earnings per common share – assuming dilution reflects the potential dilution arising from our outstanding stock options and nonvested shares granted to employees in connection with our stock-based compensation plans. Potentially dilutive securities are excluded from the computation of earnings per common share – assuming dilution when the effect of including such shares would be antidilutive.

Financial Instruments

Our financial instruments include cash and temporary cash investments, receivables, payables, debt, capital lease obligations, commodity derivative contracts, and foreign currency derivative contracts. The estimated fair values of these financial instruments approximate their carrying amounts, except for certain debt as discussed in Note 18.

Derivatives and Hedging

All derivative instruments, not designated as normal purchases or sales, are recorded in the balance sheet as either assets or liabilities measured at their fair values with changes in fair value recognized currently in income. To manage commodity price risk, we use economic hedges, which are not designated as fair value or cash flow hedges, and we use fair value and cash flow hedges from time to time. We also enter into certain commodity derivative instruments for trading purposes. The cash flow effects of all of our derivative instruments are reflected in operating activities in the statements of cash flows.

Business Combinations

Effective January 1, 2017, we adopted the provisions of Accounting Standards Update (ASU) No. 2017-01, "Business Combinations (Topic 805)," that was issued by the Financial Accounting Standards Board (FASB) in January 2017. This ASU provides a more robust framework to evaluate whether transactions should be accounted for as acquisitions (dispositions) of assets or businesses. Our adoption of this ASU did not affect our financial position or results of operations. However, more of our future acquisitions may be accounted for as acquisitions of assets in accordance with this ASU.

Accounting Pronouncements Adopted on January 1, 2018

ASU No. 2014-09

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)," to clarify the principles for recognizing revenue. This new standard is effective for annual reporting periods beginning after December 15, 2017, including interim reporting periods within those annual periods. We adopted this standard on January 1, 2018 and it will not materially change the amount or timing of revenues recognized by us, nor will it materially affect our financial position. The majority of our revenues are generated from the sale of refined petroleum products and ethanol. These revenues are largely based on the current spot (market) prices of the products sold, which represent consideration specifically allocable to the products being sold on a given day, and we recognize those revenues upon delivery and transfer of title to the products to our customers. The time at which delivery and transfer of title occurs is the point when our control of the products is transferred to our customers and when our performance obligation to our customers is fulfilled.

We adopted this new standard on January 1, 2018 using the modified retrospective method as permitted by the standard. Under this method, the cumulative effect of initially applying the standard is recognized as an adjustment to the opening balance of retained earnings, and revenues reported in the periods prior to the date of adoption are not changed. Because the adoption of this standard did not materially impact the manner in which we recognize revenues, we will not make such an adjustment to retained earnings. We continue to develop our revenue disclosures and have enhanced our accounting systems to enable the preparation of such disclosures.

ASU No. 2016-01

In January 2016, the FASB issued ASU No. 2016-01, "Financial Instruments—Overall (Subtopic 825-10)," to enhance the reporting model for financial instruments regarding certain aspects of recognition, measurement, presentation, and disclosure. The provisions of this ASU are effective for annual reporting periods beginning after December 15, 2017, and interim reporting periods within those annual periods. This ASU is to be applied using a cumulative-effect adjustment to the balance sheet as of the beginning of the year of adoption. The adoption of this ASU effective January 1, 2018 did not affect our financial position nor will it affect our results of operations, but it will result in revised disclosures.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

ASU No. 2017-07

In March 2017, the FASB issued ASU No. 2017-07, “Compensation—Retirement Benefits (Topic 715),” which requires employers to report the service cost component of net periodic pension cost and net periodic postretirement benefit cost in the same line item as other compensation costs arising from services rendered by the pertinent employees during the period. It also requires the other components of net periodic pension cost and net periodic postretirement benefit cost (non-service cost components) to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. This ASU is to be applied retrospectively for income statement items and prospectively for any capitalized benefit costs. The adoption of this ASU effective January 1, 2018 did not affect our financial position or results of operations, but will result in the reclassification of the non-service cost components from operating expenses (excluding depreciation and amortization) and general and administrative expenses (excluding depreciation and amortization) to “other income, net.”

ASU No. 2017-09

In May 2017, the FASB issued ASU No. 2017-09, “Compensation—Stock Compensation (Topic 718),” to reduce diversity in practice, as well as reduce cost and complexity regarding a change to the terms or conditions of a share-based payment award. The adoption of this ASU effective January 1, 2018 did not have an immediate effect on our financial position or results of operations as it will be applied prospectively to an award modified on or after adoption.

Accounting Pronouncements Not Yet Adopted

ASU No. 2016-02

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842),” to increase the transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. This new standard is effective for annual reporting periods beginning after December 15, 2018, and interim reporting periods within those annual periods, with early adoption permitted. We will adopt this new standard on January 1, 2019, and we expect to use the modified retrospective method of adoption. We are enhancing our contracting and lease evaluation systems and related processes, and we are developing a new lease accounting system to capture our leases and support the required disclosures. During 2018, we will continue to monitor the adoption process to ensure compliance with accounting and disclosure requirements. We also continue the integration of our lease accounting system with our general ledger, and we will make modifications to the related procurement and payment processes. We anticipate this standard will have a material impact on our financial position by increasing our assets and liabilities by equal amounts through the recognition of right-of-use assets and lease liabilities for our operating leases. However, we do not expect adoption to have a material impact on our results of operations or liquidity. We expect our accounting for capital leases to remain substantially unchanged.

ASU No. 2017-12

In August 2017, the FASB issued ASU No. 2017-12, “Derivatives and Hedging (Topic 815),” to improve and simplify accounting guidance for hedge accounting. The provisions of this ASU are effective for annual reporting periods beginning after December 15, 2018, and interim reporting periods within those annual periods, with early adoption permitted. We use economic hedges to manage commodity price risk; however, we have not designated these hedges as fair value or cash flow hedges. As a result, the adoption of this ASU effective January 1, 2019 is not expected to affect our financial position or results of operations.

ASU No. 2018-02

In February 2018, the FASB issued ASU No. 2018-02, “Income Statement—Reporting Comprehensive Income (Topic 220),” which allows for the reclassification from accumulated other comprehensive income to retained earnings for the stranded tax effects resulting from the Tax Cuts and Jobs Act of 2017 (Tax Reform), as discussed in Note 14. The provisions of this ASU are effective for annual reporting periods beginning after December 15, 2018, and interim reporting periods within those annual periods, with early adoption permitted. This ASU shall be applied at the beginning of the annual or interim period of adoption or retrospectively to each period in which the income tax effects of Tax Reform affects the items remaining in accumulated other comprehensive income. The adoption of this ASU is not expected to affect our financial position or results of operations, but will result in the reclassification of the income tax effects of Tax Reform and additional disclosures.

2. ARUBA DISPOSITION

Effective October 1, 2016, we (i) transferred ownership of all of our assets in Aruba, other than certain hydrocarbon inventories and working capital, to Refineria di Aruba N.V., an entity wholly-owned by the Government of Aruba (GOA), (ii) settled our obligations under various agreements with the GOA, including agreements that required us to dismantle our leasehold improvements under certain conditions, and (iii) sold the working capital of our Aruba operations, including hydrocarbon inventories, to the GOA and CITGO (defined below). We refer to this transaction as the “Aruba Disposition.” The agreements associated with the Aruba Disposition were finalized in September 2016, including approval of such agreements by the Aruba Parliament. We no longer own any assets or have any operations in Aruba.

In September 2016 and in connection with the Aruba Disposition, our U.S. subsidiaries were unable to collect outstanding debt obligations owed to them by our Aruba subsidiaries, which resulted in the recognition by us of an income tax benefit in the U.S. of $42 million during the year ended December 31, 2016. We had no income tax effect in Aruba from the cancellation of debt or other effects of the Aruba Disposition because of net operating loss carryforwards associated with our operations in Aruba against which we had previously recorded a full valuation allowance.

Prior to the Aruba Disposition, we recognized an asset impairment loss of $56 million in June 2016 representing all of the remaining carrying value of our long-lived assets in Aruba. These assets were primarily related to our crude oil and refined petroleum products terminal and transshipment facility in Aruba (collectively, the Aruba Terminal), which were included in our refining segment. We recognized the impairment loss at that time because we concluded that it was more likely than not that we would ultimately transfer ownership of these assets to the GOA as a result of agreements entered into in June 2016 between the GOA, CITGO Aruba Refining N.V. (CAR), and CITGO Petroleum Corporation (together with CAR and certain other affiliates, collectively, CITGO) providing for, among other things, the GOA’s lease of those assets to CITGO. (See Note 18 for disclosure related to the method to determine fair value.)

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

3. RECEIVABLES

Receivables consisted of the following (in millions):

	December 31,	
	2017	2016
Accounts receivable	$ 6,786	$ 5,687
Commodity derivative and foreign currency contract receivables	102	129
Other receivables	67	117
	6,955	5,933
Allowance for doubtful accounts	(33)	(32)
Receivables, net	$ 6,922	$ 5,901

There were no significant changes in our allowance for doubtful accounts during the years ended December 31, 2017, 2016, and 2015.

4. INVENTORIES

Inventories consisted of the following (in millions):

	December 31,	
	2017	2016
Refinery feedstocks	$ 2,427	$ 2,068
Refined petroleum products and blendstocks	3,459	3,153
Ethanol feedstocks and products	242	238
Materials and supplies	256	250
Inventories	$ 6,384	$ 5,709

As of December 31, 2017 and 2016, the replacement cost (market value) of LIFO inventories exceeded their LIFO carrying amounts by $3.0 billion and $1.9 billion, respectively. As of December 31, 2017 and 2016, our non-LIFO inventories accounted for $1.0 billion and $641 million, respectively, of our total inventories.

During the year ended December 31, 2016, we recorded a change in our lower of cost or market inventory valuation reserve that resulted in a net benefit to our results of operations of $747 million, and we had a liquidation of LIFO inventory layers that increased cost of sales by $120 million.

During the year ended December 31, 2015, we recorded a lower of cost or market inventory valuation adjustment that resulted in a net charge to our results of operations of $790 million in order to state our inventories at market as of December 31, 2015.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

5. PROPERTY, PLANT, AND EQUIPMENT

Major classes of property, plant, and equipment, including assets held under capital leases, consisted of the following (in millions):

	December 31,	
	2017	2016
Land	$ 411	$ 400
Crude oil processing facilities	30,109	29,754
Transportation and terminaling facilities	4,335	3,692
Grain processing equipment	903	855
Administrative buildings	910	838
Other	2,068	1,464
Construction in progress	1,274	730
Property, plant, and equipment, at cost	40,010	37,733
Accumulated depreciation	(12,530)	(11,261)
Property, plant, and equipment, net	$ 27,480	$ 26,472

We have various assets under capital leases that primarily support our refining operations totaling $635 million and $118 million as of December 31, 2017 and 2016, respectively. Accumulated amortization on assets under capital leases was $72 million and $45 million as of December 31, 2017 and 2016, respectively.

Depreciation expense was $1.3 billion for each of the years in the three-year period ended December 31, 2017.

6. DEFERRED CHARGES AND OTHER ASSETS

"Deferred charges and other assets, net" consisted of the following (in millions):

	December 31,	
	2017	2016
Deferred turnaround and catalyst costs, net	$ 1,520	$ 1,614
Income taxes receivable	673	447
Investments in joint ventures	530	201
Intangible assets, net	142	148
Other	501	491
Deferred charges and other assets, net	$ 3,366	$ 2,901

Amortization expense for the deferred charges and other assets shown above was $650 million, $575 million, and $542 million for the years ended December 31, 2017, 2016, and 2015, respectively.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

7. ACCRUED EXPENSES AND OTHER LONG-TERM LIABILITIES

Accrued expenses and other long-term liabilities consisted of the following (in millions):

	Accrued Expenses		Other Long-Term Liabilities	
	December 31,		December 31,	
	2017	2016	2017	2016
Defined benefit plan liabilities (see Note 12)	$ 33	$ 32	$ 776	$ 742
Wage and other employee-related liabilities	278	225	111	103
Uncertain income tax position liabilities (see Note 14)	—	—	723	465
Repatriation tax liability (see Note 14)	—	—	597	—
Environmental liabilities	30	29	232	223
Environmental credit obligations (see Note 18)	152	214	—	—
Accrued interest expense	105	104	—	—
Other accrued liabilities	114	90	290	211
Accrued expenses and other long-term liabilities	$ 712	$ 694	$ 2,729	$ 1,744

There were no significant changes in our environmental liabilities during each of the years in the three-year period ended December 31, 2017.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

8. DEBT AND CAPITAL LEASE OBLIGATIONS

Debt, at stated values, and capital lease obligations consisted of the following (in millions):

	Final Maturity	December 31, 2017	December 31, 2016
Bank credit facilities:			
Valero Revolver	2020	$ —	$ —
VLP Revolver	2020	410	30
Canadian Revolver	2018	—	—
Accounts receivable sales facility	2018	100	100
Non-bank debt:			
Valero Senior Notes			
6.625%	2037	1,500	1,500
3.4%	2026	1,250	1,250
6.125%	2020	850	850
9.375%	2019	750	750
7.5%	2032	750	750
4.9%	2045	650	650
3.65%	2025	600	600
10.5%	2039	250	250
8.75%	2030	200	200
7.45%	2097	100	100
6.75%	2037	24	24
VLP Senior Notes, 4.375%	2026	500	500
Gulf Opportunity Zone Revenue Bonds, Series 2010, 4.0%	2040	300	300
Debenture, 7.65%	2026	100	100
Other debt	2023	49	51
Net unamortized debt issuance costs and other		(73)	(79)
Total debt		8,310	7,926
Capital lease obligations		562	75
Total debt and capital lease obligations		8,872	8,001
Less current portion		122	115
Debt and capital lease obligations, less current portion		$ 8,750	$ 7,886

Bank Credit Facilities

Valero Revolver

We have a $3 billion revolving credit facility (the Valero Revolver) with a group of financial institution lenders that matures in November 2020. We have the option to increase the aggregate commitments under the Valero Revolver to $4.5 billion and we may request two additional one-year extensions, subject to certain conditions. The Valero Revolver also provides for the issuance of letters of credit of up to $2.0 billion.

Outstanding borrowings under the Valero Revolver bear interest, at our option, at either (a) the adjusted LIBO rate (as defined in the Valero Revolver) for the applicable interest period in effect from time to time plus the applicable margin or (b) the alternate base rate (as defined in the Valero Revolver) plus the applicable margin. The Valero Revolver also requires payments for customary fees, including facility fees, letter of credit participation fees, and administrative agent fees. The interest rate and facility fees under the Valero Revolver are subject to adjustment based upon the credit ratings assigned to our senior unsecured debt.

We had no borrowings or repayments under the Valero Revolver during the years ended December 31, 2017, 2016, and 2015.

VLP Revolver

VLP has a $750 million senior unsecured revolving credit facility (the VLP Revolver) with a group of lenders that matures in November 2020. The VLP Revolver is available only to the operations of VLP, and creditors of VLP do not have recourse against Valero. VLP has the option to increase the aggregate commitments under the VLP Revolver to $1.0 billion and VLP may request two additional one-year extensions, subject to certain conditions. VLP may terminate the VLP Revolver with notice to the lenders of at least three business days prior to termination. The VLP Revolver also provides for the issuance of letters of credit of up to $100 million. As a result of VLP obtaining an investment grade rating with respect to its issuance of senior notes in December 2016, VLP’s directly owned subsidiary, Valero Partners Operating Co. LLC, was released of its guarantee under the VLP Revolver.

Outstanding borrowings under the VLP Revolver bear interest, at VLP’s option, at either (a) the adjusted LIBO rate (as defined in the VLP Revolver) for the applicable interest period in effect from time to time plus the applicable margin or (b) the alternate base rate (as defined in the VLP Revolver) plus the applicable margin. As of December 31, 2017 and 2016, the variable rate was 2.875 percent and 2.3125 percent, respectively. The VLP Revolver requires payments for customary fees, including commitment fees, letter of credit participation fees, and administrative agent fees. The VLP Revolver contains certain restrictive covenants, including a covenant that requires VLP to maintain a ratio of total debt to EBITDA (as defined in the VLP Revolver) for the prior four fiscal quarters of not greater than 5.0 to 1.0 as of the last day of each fiscal quarter, and limitations on VLP’s ability to pay distributions to its unitholders.

During the year ended December 31, 2017, VLP borrowed $118 million and $262 million under the VLP Revolver in connection with VLP’s acquisitions from us of Parkway Pipeline LLC and Valero Partners Port Arthur, LLC, respectively, and had no repayments under the VLP Revolver. During the year ended December 31, 2016, VLP borrowed $139 million and $210 million under the VLP Revolver in connection with VLP’s acquisitions from us of the McKee Terminal Services Business and the Meraux and Three Rivers Terminal Services Business, respectively, and repaid $494 million on the VLP Revolver. During the year ended December 31, 2015, VLP borrowed $200 million under the VLP Revolver in connection with VLP's acquisition from us of the Houston and St. Charles Terminal Services Business and repaid $25 million on the VLP Revolver.

Canadian Revolver

In October 2017, one of our Canadian subsidiaries amended its committed revolving credit facility (the Canadian Revolver) to increase the borrowing capacity from C$25 million to C$75 million under which it may borrow and obtain letters of credit and to extend the maturity date from November 2017 to November 2018.

We had no borrowings or repayments under the Canadian Revolver during the years ended December 31, 2017, 2016, and 2015.

Accounts Receivable Sales Facility

We have an accounts receivable sales facility with a group of third-party entities and financial institutions to sell up to $1.3 billion of eligible trade receivables on a revolving basis. In July 2017, we amended our agreement to extend the maturity date to July 2018. Proceeds from the sale of receivables under this facility are reflected as debt. Under this program, one of our marketing subsidiaries (Valero Marketing) sells eligible receivables, without recourse, to another of our subsidiaries (Valero Capital), whereupon the receivables are no longer owned by Valero Marketing. Valero Capital, in turn, sells an undivided percentage ownership interest in the eligible receivables, without recourse, to the third-party entities and financial institutions. To the extent that Valero Capital retains an ownership interest in the receivables it has purchased from Valero Marketing, such interest is included in our financial statements solely as a result of the consolidation of the financial statements of Valero Capital with those of Valero Energy Corporation; the receivables are not available to satisfy the claims of the creditors of Valero Marketing or Valero Energy Corporation.

As of December 31, 2017 and 2016, $2.3 billion and $2.0 billion, respectively, of our accounts receivable composed the designated pool of accounts receivable included in the program. All amounts outstanding under the accounts receivable sales facility are reflected as debt on our balance sheets and proceeds and repayments are reflected as cash flows from financing activities on the statements of cash flows. As of December 31, 2017 and 2016, the variable interest rate on the accounts receivable sales facility was 2.0387 percent and 1.3422 percent, respectively. During the years ended December 31, 2017, 2016, and 2015, we had no proceeds from or repayments under the accounts receivable sales facility.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Summary of Credit Facilities
We had outstanding borrowings, letters of credit issued, and availability under our credit facilities as follows (in millions):

	Facility Amount	Maturity Date	December 31, 2017 Outstanding Borrowings	Letters of Credit Issued	Availability
Committed facilities:					
Valero Revolver	$ 3,000	November 2020	$ —	$ 54	$ 2,946
VLP Revolver	$ 750	November 2020	$ 410	$ —	$ 340
Canadian Revolver	C$ 75	November 2018	C$ —	C$ 10	C$ 65
Accounts receivable sales facility	$ 1,300	July 2018	$ 100	n/a	$ 1,200
Letter of credit facility	$ 100	November 2018	n/a	$ —	$ 100
Uncommitted facilities:					
Letter of credit facilities	n/a	n/a	n/a	$ 249	n/a

Letters of credit issued as of December 31, 2017 expire at various times in 2018 through 2020.

In June 2017, one of our committed letter of credit facilities with a borrowing capacity of $125 million expired and was not renewed. In November 2017, the remaining committed letter of credit facility with a borrowing capacity of $100 million was amended to extend the maturity date from November 2017 to November 2018.

We are charged letter of credit issuance fees under our various uncommitted short-term bank credit facilities. These uncommitted credit facilities have no commitment fees or compensating balance requirements.

Non-Bank Debt
There was no issuance or redemption activity related to our non-bank debt during the year ended December 31, 2017.

During the year ended December 31, 2016, the following activity occurred:

- We issued $1.25 billion of 3.4 percent Senior Notes due September 15, 2026. Proceeds from this debt issuance totaled $1.246 billion. We also incurred $10 million of debt issuance costs.

- We redeemed our 6.125 percent Senior Notes with a maturity date of June 15, 2017 for $778 million, or 103.70 percent of stated value.

- We redeemed our 7.2 percent Senior Notes with a maturity date of October 15, 2017 for $213 million, or 106.27 percent of stated value.

- VLP issued $500 million of 4.375 percent Senior Notes due December 15, 2026. Proceeds from this debt issuance totaled $500 million. Debt issuance costs totaled $4 million.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

During the year ended December 31, 2015, the following activity occurred:

- We issued $600 million of 3.65 percent Senior Notes due March 15, 2025 and $650 million of 4.9 percent Senior Notes due March 15, 2045. Proceeds from these debt issuances totaled $1.246 billion. We also incurred $12 million of debt issuance costs.

- We made scheduled debt repayments of $400 million related to our 4.5 percent Senior Notes and $75 million related to our 8.75 percent debentures.

Capital Lease Obligations
We have capital lease obligations that mature at various dates through 2046 for storage tanks, terminal facilities, and other assets that are used in our refining operations. In January 2017, we recognized capital lease assets and related obligations totaling approximately $490 million for the lease of storage tanks located at three of our refineries. These lease agreements have initial terms of 10 years each with successive 10-year automatic renewals.

Other Disclosures
Interest and debt expense, net of capitalized interest is comprised as follows (in millions):

	Year Ended December 31,		
	2017	2016	2015
Interest and debt expense	$ 539	$ 511	$ 504
Less capitalized interest	71	65	71
Interest and debt expense, net of capitalized interest	$ 468	$ 446	$ 433

Our credit facilities and other debt arrangements contain various customary restrictive covenants, including cross-default and cross-acceleration clauses.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Principal maturities for our debt obligations and future minimum rentals on capital lease obligations as of December 31, 2017 were as follows (in millions):

	Debt	Capital Lease Obligations
2018	$ 106	$ 55
2019	756	55
2020	1,266	53
2021	6	52
2022	6	54
Thereafter	6,243	969
Net unamortized debt issuance costs and other	(73)	n/a
Total minimum lease payments	n/a	1,238
Less amount representing interest	n/a	676
Total	$ 8,310	$ 562

9. COMMITMENTS AND CONTINGENCIES

Operating Leases

We have long-term operating lease commitments for land, office facilities and equipment, transportation equipment, time charters for ocean-going tankers and coastal vessels, dock facilities, and various facilities and equipment used in the storage, transportation, production, and sale of refinery feedstock, refined petroleum product and corn inventories.

Certain leases for processing equipment and feedstock and refined petroleum product storage facilities provide for various contingent payments based on, among other things, throughput volumes in excess of a base amount. Certain leases for vessels contain renewal options and escalation clauses, which vary by charter, and provisions for the payment of chartering fees, which either vary based on usage or provide for payments, in addition to established minimums, that are contingent on usage. In most cases, we expect that in the normal course of business, our leases will be renewed or replaced by other leases.

As of December 31, 2017, our future minimum rentals for leases having initial or remaining noncancelable lease terms in excess of one year were as follows (in millions):

2018	$	359
2019		236
2020		148
2021		104
2022		74
Thereafter		366
Total minimum rental payments	$	1,287
Minimum rentals to be received under subleases	$	15

"Rental expense, net of sublease rental income" was as follows (in millions):

	Year Ended December 31,		
	2017	2016	2015
Minimum rental expense	$ 691	$ 739	$ 732
Contingent rental expense	21	70	105
Total rental expense	712	809	837
Less sublease rental income	54	31	46
Rental expense, net of sublease rental income	$ 658	$ 778	$ 791

Purchase Obligations

We have various purchase obligations under certain industrial gas and chemical supply arrangements (such as hydrogen supply arrangements), crude oil and other feedstock supply arrangements, and various throughput and terminaling agreements. We enter into these contracts to ensure an adequate supply of utilities and feedstock and adequate storage capacity to operate our refineries and ethanol plants. Substantially all of our purchase obligations are based on market prices or adjustments based on market indices. Certain of these purchase obligations include fixed or minimum volume requirements, while others are based on our usage requirements. None of these obligations are associated with suppliers' financing arrangements. These purchase obligations are not reflected as liabilities.

Other Commitments

MVP Terminal

We have a 50 percent membership interest in MVP Terminalling, LLC (MVP), a Delaware limited liability company formed in September 2017 with a subsidiary of Magellan Midstream Partners LP (Magellan), to construct, own, and operate the Magellan Valero Pasadena marine terminal (MVP Terminal) located adjacent to the Houston Ship Channel in Pasadena, Texas. The MVP Terminal will contain (i) approximately 5 million barrels of storage capacity, (ii) a dock with two ship berths, and (iii) a three-bay truck rack facility. In connection with our terminaling agreement with MVP, described below, we will have dedicated use of (i) approximately 4 million barrels of storage, (ii) one ship berth, and (iii) the three-bay truck rack facility.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Construction of phases one and two of the project began in 2017 with a total estimated cost of $840 million, of which we have committed to contribute 50 percent (approximately $420 million). The project could expand up to four phases with a total project cost of approximately $1.4 billion if warranted by additional demand and agreed to by Magellan and us. We have contributed $81 million to MVP through December 2017.

Concurrent with the formation of MVP, we entered into a terminaling agreement with MVP to utilize the MVP Terminal upon completion of phase two, which is expected to occur in early 2020. The terminaling agreement has an initial term of 12 years with two five-year automatic renewals, and year-to-year renewals thereafter.

Due to our membership interest in MVP and because the terminaling agreement was determined to be a capital lease, we are the accounting owner of the MVP Terminal during the construction period. Accordingly, as of December 31, 2017, we recorded an asset of $174 million in property, plant, and equipment representing 100 percent of the construction costs incurred by MVP, as well as capitalized interest incurred by us, and a long-term liability of $94 million payable to Magellan. The amounts recorded for the portion of the construction costs associated with the payable to Magellan are noncash investing and financing items, respectively.

Central Texas Pipeline and Terminal Projects
We have committed to a 40 percent undivided interest in a project with a subsidiary of Magellan to jointly build an estimated 135-mile, 20-inch refined petroleum products pipeline with a capacity of up to 150,000 barrels per day from Houston to Hearne, Texas. The pipeline is expected to be completed in mid-2019. Our estimated cost to acquire our 40 percent undivided interest in this pipeline is $170 million. We have incurred capital expenditures of $7 million through December 2017.

Sunrise Pipeline System
Effective January 31, 2018, we entered into a joint ownership agreement with Sunrise Pipeline LLC, a subsidiary of Plains All American Pipeline, L.P. (Plains) to acquire a 20 percent undivided interest in the expanded Sunrise Pipeline System to be constructed by Plains. The Sunrise Pipeline System will contain (i) a 262-mile, 24-inch crude oil pipeline (the Sunrise Pipeline) that will originate at Plains' terminal in Midland, Texas and will end at Plains' station in Wichita Falls, Texas with throughput capacity of 500,000 barrels per day, and (ii) two 270,000 shell barrel capacity tanks located at the Colorado City, Texas station (the Colorado City Storage Tanks). The Sunrise Pipeline System expansion is expected to begin construction in early 2018 and continue through the first half of 2019. The cost to acquire our 20 percent undivided interest in the Sunrise Pipeline System is $135 million, of which $34 million was paid on February 1, 2018. Including the February 2018 payment, we expect to incur approximately $101 million during 2018.

Environmental Matters
We are involved, together with several other companies, in an environmental cleanup in the Village of Hartford, Illinois (the Village) and during 2015, one of these companies assumed the ongoing remediation in the Village pursuant to a federal court order. We had previously conducted an initial response in the Village, along with other companies, pursuant to an administrative order issued by the U.S. EPA. The parties involved in the initial response may have further claims among themselves for costs already incurred. We also continue to be engaged in site assessment and interim measures at the adjacent shutdown refinery site, which we

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

acquired as part of an acquisition in 2005, and we are in litigation with other potentially responsible parties and the Illinois EPA relating to the remediation of the site. In each of these matters, we have various defenses, limitations, and potential rights for contribution from the other responsible parties. We have recorded a liability for our expected contribution obligations. However, because of the unpredictable nature of these cleanups, the methodology for allocation of liabilities, and the State of Illinois' failure to directly sue third parties responsible for historic contamination at the site, it is reasonably possible that we could incur a loss in a range of $0 to $200 million in excess of the amount of our accrual to ultimately resolve these matters. Factors underlying this estimated range are expected to change from time to time, and actual results may vary significantly from this estimate.

Litigation Matters
We are party to claims and legal proceedings arising in the ordinary course of business. We have not recorded a loss contingency liability with respect to some of these matters because we have determined that it is remote that a loss has been incurred. For other matters, we have recorded a loss contingency liability where we have determined that it is probable that a loss has been incurred and that the loss is reasonably estimable. These loss contingency liabilities are not material to our financial position. We re-evaluate and update our loss contingency liabilities as matters progress over time, and we believe that any changes to the recorded liabilities will not be material to our financial position, results of operations, or liquidity.

Self-Insurance
We are self-insured for certain medical and dental, workers' compensation, automobile liability, general liability, and property liability claims up to applicable retention limits. Liabilities are accrued for self-insured claims, or when estimated losses exceed coverage limits, and when sufficient information is available to reasonably estimate the amount of the loss. These liabilities are included in accrued expenses and other long-term liabilities.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

10. EQUITY

Share Activity
Activity in the number of shares of common stock and treasury stock was as follows (in millions):

	Common Stock	Treasury Stock
Balance as of December 31, 2014	673	(159)
Transactions in connection with stock-based compensation plans	—	1
Stock purchases under purchase program	—	(42)
Balance as of December 31, 2015	673	(200)
Transactions in connection with stock-based compensation plans	—	1
Stock purchases under purchase program	—	(23)
Balance as of December 31, 2016	673	(222)
Transactions in connection with stock-based compensation plans	—	1
Stock purchases under purchase program	—	(19)
Balance as of December 31, 2017	673	(240)

Preferred Stock
We have 20 million shares of preferred stock authorized with a par value of $0.01 per share. No shares of preferred stock were outstanding as of December 31, 2017 or 2016.

Treasury Stock
We purchase shares of our common stock as authorized under our common stock purchase program (described below) and to meet our obligations under employee stock-based compensation plans.

On February 28, 2008, our board of directors approved a $3 billion common stock purchase program with no expiration date, and we completed that program during 2015. On July 13, 2015, our board of directors authorized us to purchase an additional $2.5 billion of our outstanding common stock (the 2015 program) with no expiration date, and we completed that program during 2017. On September 21, 2016, our board of directors authorized our purchase of up to an additional $2.5 billion (the 2016 program) with no expiration date. During the years ended December 31, 2017, 2016, and 2015, we purchased $1.3 billion, $1.3 billion, and $2.7 billion, respectively, of our common stock under our programs. As of December 31, 2017, we have approvals under the 2016 program to purchase approximately $1.2 billion of our common stock.

On January 23, 2018, our board of directors authorized our purchase of up to an additional $2.5 billion of our outstanding common stock with no expiration date.

Common Stock Dividends
On January 23, 2018, our board of directors declared a quarterly cash dividend of $0.80 per common share payable on March 6, 2018 to holders of record at the close of business on February 13, 2018.

Valero Energy Partners LP Units
On September 16, 2016, VLP entered into an equity distribution agreement pursuant to which VLP may offer and sell from time to time their common units having an aggregate offering price of up to $350 million based on amounts, at prices, and on terms to be determined by market conditions and other factors at the time of the offerings (such continuous offering program, or at-the-market program, referred to as the "ATM Program"). VLP issued 742,897 and 223,083 common units under the ATM Program and received net proceeds of $35 million and $9 million after deducting offering costs during the years ended December 31, 2017 and 2016, respectively.

Effective November 24, 2015, VLP completed a public offering of 4,250,000 common units at a price of $46.25 per unit and received net proceeds from the offering of $189 million after deducting the underwriting discount and other offering costs.

Income Tax Effects Related to Components of Other Comprehensive Income (Loss)
The tax effects allocated to each component of other comprehensive income (loss) were as follows (in millions):

	Before-Tax Amount	Tax Expense (Benefit)	Net Amount
Year Ended December 31, 2017:			
Foreign currency translation adjustment	$ 514	$ —	$ 514
Pension and other postretirement benefits:			
Loss arising during the year related to:			
Net actuarial loss	(79)	(29)	(50)
Prior service cost	(4)	(1)	(3)
Miscellaneous loss	—	3	(3)
Amounts reclassified into income related to:			
Net actuarial loss	50	18	32
Prior service credit	(36)	(13)	(23)
Curtailment and settlement loss	4	1	3
Net loss on pension and other postretirement benefits	(65)	(21)	(44)
Other comprehensive income	$ 449	$ (21)	$ 470

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	Before-Tax Amount	Tax Expense (Benefit)	Net Amount
Year Ended December 31, 2016:			
Foreign currency translation adjustment	$ (415)	$ —	$ (415)
Pension and other postretirement benefits:			
Gain (loss) arising during the year related to:			
Net actuarial loss	(110)	(34)	(76)
Miscellaneous gain	—	(8)	8
Amounts reclassified into income related to:			
Net actuarial loss	48	18	30
Prior service credit	(36)	(13)	(23)
Net loss on pension and other postretirement benefits	(98)	(37)	(61)
Other comprehensive loss	$ (513)	$ (37)	$ (476)
Year Ended December 31, 2015:			
Foreign currency translation adjustment	$ (606)	$ —	$ (606)
Pension and other postretirement benefits:			
Gain (loss) arising during the year related to:			
Net actuarial gain	50	15	35
Prior service cost	(22)	(8)	(14)
Amounts reclassified into income related to:			
Net actuarial loss	62	22	40
Prior service credit	(40)	(14)	(26)
Curtailment and settlement loss	7	2	5
Net gain on pension and other postretirement benefits	57	17	40
Other comprehensive loss	$ (549)	$ 17	$ (566)

Accumulated Other Comprehensive Income (Loss)

Changes in accumulated other comprehensive income (loss) by component, net of tax, were as follows (in millions):

	Foreign Currency Translation Adjustment	Defined Benefit Plan Items	Total
Balance as of December 31, 2014	$ 1	$ (368)	$ (367)
Other comprehensive income (loss) before reclassifications	(606)	21	(585)
Amounts reclassified from accumulated other comprehensive income (loss)	—	19	19
Net other comprehensive income (loss)	(606)	40	(566)
Balance as of December 31, 2015	(605)	(328)	(933)
Other comprehensive loss before reclassifications	(416)	(68)	(484)
Amounts reclassified from accumulated other comprehensive loss	—	7	7
Net other comprehensive loss	(416)	(61)	(477)
Balance as of December 31, 2016	(1,021)	(389)	(1,410)
Other comprehensive income (loss) before reclassifications	514	(56)	458
Amounts reclassified from accumulated other comprehensive loss	—	12	12
Net other comprehensive income (loss)	514	(44)	470
Balance as of December 31, 2017	$ (507)	$ (433)	$ (940)

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Gains (losses) reclassified out of accumulated other comprehensive loss and into net income were as follows (in millions):

Details about Accumulated Other Comprehensive Loss Components	Year Ended December 31, 2017	2016	2015	Affected Line Item in the Statement of Income
Amortization of items related to defined benefit pension plans:				
Net actuarial loss	$ (50)	$ (48)	$ (62)	(a)
Prior service credit	36	36	40	(a)
Curtailment and settlement	(4)	—	(7)	(a)
	(18)	(12)	(29)	Total before tax
	6	5	10	Tax benefit
Total reclassifications for the year	$ (12)	$ (7)	$ (19)	Net of tax

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(a) These accumulated other comprehensive loss components are included in the computation of net periodic benefit cost, as further discussed in Note 12. Net periodic benefit cost is reflected in operating expenses (excluding depreciation and amortization expense) and general and administrative expenses (excluding depreciation and amortization expense).

11. VARIABLE INTEREST ENTITIES

Consolidated VIEs

In the normal course of business, we have financial interests in certain entities that have been determined to be VIEs. We consolidate a VIE when we have a variable interest in an entity for which we are the primary beneficiary such that we have (a) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and (b) the obligation to absorb losses of or the right to receive benefits from the VIE that could potentially be significant to the VIE. In order to make this determination, we evaluated our contractual arrangements with the VIEs, including arrangements for the use of assets, purchases of products and services, debt, equity, or management of operating activities.

The following discussion summarizes our involvement with our VIEs:

- VLP is a publicly traded master limited partnership whose common limited partner units are traded on the New York Stock Exchange under "VLP." We formed VLP in July 2013 to own, operate, develop, and acquire crude oil and refined petroleum products pipelines, terminals, and other transportation and logistics assets. VLP's assets include crude oil and refined petroleum products pipeline and terminal systems in the U.S. Gulf Coast and U.S. Mid-Continent regions that are integral to the operations of ten of our refineries. As of December 31, 2017, we owned a 66.2 percent limited partner interest and a 2.0 percent general partner interest in VLP, and public unitholders owned a 31.8 percent limited partner interest.

  We determined VLP is a VIE because the public limited partners of VLP (*i.e.*, parties other than entities under common control with the general partner) lack the power to direct the activities of VLP that most significantly impact its economic performance because they do not have substantive kick-out rights over the general partner or substantive participating rights in VLP. Furthermore, we determined that we are the primary beneficiary of VLP because (a) we are the single decision maker and because our general partner interest provides us with the sole power to direct the activities that most significantly impact VLP's economic performance and (b) our 66.2 percent limited partner interest and 2.0 percent general partner interest provide us with significant economic rights and obligations. Substantially all of VLP's revenues are derived from us; therefore, there is limited risk to us associated with VLP's operations.

- Diamond Green Diesel Holdings LLC (DGD) is a joint venture with Darling Green Energy LLC, a subsidiary of Darling Ingredients Inc., that was formed to construct and operate a biodiesel plant that processes animal fats, used cooking oils, and other vegetable oils into renewable green diesel. The plant is located next to our St. Charles Refinery and began operations in June 2013. Our significant agreements with DGD include an operations agreement that outlines our responsibilities as operator of the plant, a debt agreement whereby we financed approximately 60 percent of the construction costs of the plant, and a marketing agreement.

  As operator, we operate the plant and perform certain day-to-day operating and management functions for DGD as an independent contractor. The operations agreement provides us (as operator) and, in the event of certain conditions, the debt agreement provides us (as lender) with certain power to direct the activities that most significantly impact DGD's economic performance. Because the operations agreement and the debt agreement convey such power to us and are separate from our ownership rights, DGD was determined to be a VIE. For this reason and because we hold a 50 percent ownership interest that provides us with significant economic rights and obligations, we determined that we are the primary beneficiary of DGD. DGD has risk associated with its operations because it generates revenues from third-party customers.

- We have terminaling agreements with three subsidiaries of Infraestructura Energetica Nova, S.A.B. de C.V. (IEnova), a Mexican subsidiary of Sempra Energy, a U.S. public company (the three subsidiaries are collectively referred to as VPM Terminals). The terminaling agreements represent variable interests because we have determined them to be capital leases due to our exclusive use of the terminals. Although we do not have an ownership interest in the entities that own each of the three terminals, the capital leases convey to us (i) the power to direct the activities that most significantly impact the economic performance of all three terminals and (ii) the ability to influence the benefits received or the losses incurred by the terminals because of our use of the terminals. As a result, we determined each of the entities was a VIE and that we are the primary beneficiary of each. Substantially all of VPM Terminals' revenues will be derived from us; therefore, there is limited risk to us associated with VPM Terminals' operations.

- We also have financial interests in other entities that have been determined to be VIEs because the entities' contractual arrangements transfer the power to direct the activities that most significantly impact their economic performance or reduce the exposure to operational variability and risk of loss created by the entity that otherwise would be held exclusively by the equity owners. Furthermore, we determined that we are the primary beneficiary of these VIEs because (a) certain contractual arrangements (exclusive of our ownership rights) provide us with the power to direct the activities that most significantly impact the economic performance of these entities and/or (b) our 50 percent ownership interests provide us with significant economic rights and obligations. The financial position, results of operations, and cash flows of these VIEs are not material to us.

The VIEs' assets can only be used to settle their own obligations and the VIEs' creditors have no recourse to our assets. We do not provide financial guarantees to our VIEs. Although we have provided credit facilities to some of our VIEs in support of their construction or acquisition activities, these transactions are eliminated in consolidation. Our financial position, results of operations, and cash flows are impacted by our consolidated VIEs' performance, net of intercompany eliminations, to the extent of our ownership interest in each VIE.

The following tables present summarized balance sheet information for the significant assets and liabilities of our VIEs, which are included in our balance sheets (in millions).

	December 31, 2017				
	VLP	DGD	VPM Terminals	Other	Total
Assets					
Cash and temporary cash investments	$ 42	$ 123	$ 1	$ 13	$ 179
Other current assets	2	66	4	—	72
Property, plant, and equipment, net	1,416	435	51	127	2,029
Liabilities					
Current liabilities	$ 27	$ 33	$ 26	$ 9	$ 95
Debt and capital lease obligations, less current portion	905	—	—	43	948

	December 31, 2016			
	VLP	DGD	Other	Total
Assets				
Cash and temporary cash investments	$ 71	$ 167	$ 15	$ 253
Other current assets	3	87	—	90
Property, plant, and equipment, net	865	355	133	1,353
Liabilities				
Current liabilities	$ 15	$ 17	$ 7	$ 39
Debt and capital lease obligations, less current portion	525	—	46	571

Non-Consolidated VIEs

We hold variable interests in VIEs that have not been consolidated because we are not considered the primary beneficiary. These non-consolidated VIEs are not material to our financial position or results of operations and are primarily accounted for as equity investments. However, one of our non-consolidated VIEs is accounted for under owner accounting and is further described below and in Note 9.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

As described in Note 9, we have a 50 percent membership interest in MVP, which was formed to construct, own, and operate the MVP Terminal. We determined MVP is a VIE because the power to direct the activities that most significantly impact its economic performance is not required to be held by its two members, but is held by Magellan, as operator under a construction, operating, and management agreement with MVP. For this reason and because Magellan holds a 50 percent interest in MVP that provides it with significant economic rights and obligations, we determined that we are not the primary beneficiary. As of December 31, 2017, our maximum exposure to loss was $80 million, which represents our equity investment in MVP.

12. EMPLOYEE BENEFIT PLANS

Defined Benefit Plans

We have defined benefit pension plans, some of which are subject to collective bargaining agreements, that cover most of our employees. These plans provide eligible employees with retirement income based primarily on years of service and compensation during specific periods under final average pay and cash balance formulas. We fund our pension plans as required by local regulations. In the U.S., all qualified pension plans are subject to the Employee Retirement Income Security Act minimum funding standard. We typically do not fund or fully fund U.S. nonqualified and certain international pension plans that are not subject to funding requirements because contributions to these pension plans may be less economic and investment returns may be less attractive than our other investment alternatives.

We also provide health care and life insurance benefits for certain retired employees through our postretirement benefit plans. Most of our employees become eligible for these benefits if, while still working for us, they reach normal retirement age or take early retirement. These plans are unfunded, and retired employees share the cost with us. Individuals who became our employees as a result of an acquisition became eligible for other postretirement benefits under our plans as determined by the terms of the relevant acquisition agreement.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The changes in benefit obligation related to all of our defined benefit plans, the changes in fair value of plan assets[(a)], and the funded status of our defined benefit plans as of and for the years ended were as follows (in millions):

	Pension Plans		Other Postretirement Benefit Plans	
	December 31,		December 31,	
	2017	2016	2017	2016
Changes in benefit obligation:				
Benefit obligation as of beginning of year	$ 2,567	$ 2,365	$ 302	$ 336
Service cost	123	111	6	7
Interest cost	86	84	10	12
Participant contributions	—	—	9	8
Benefits paid	(158)	(130)	(28)	(27)
Actuarial (gain) loss	286	171	6	(35)
Other	22	(34)	1	1
Benefit obligation as of end of year	$ 2,926	$ 2,567	$ 306	$ 302
Changes in plan assets (a):				
Fair value of plan assets as of beginning of year	$ 2,097	$ 1,947	$ —	$ —
Actual return on plan assets	363	165	—	—
Valero contributions	110	141	19	18
Participant contributions	—	—	9	8
Benefits paid	(158)	(130)	(28)	(27)
Other	16	(26)	—	1
Fair value of plan assets as of end of year	$ 2,428	$ 2,097	$ —	$ —
Reconciliation of funded status (a):				
Fair value of plan assets as of end of year	$ 2,428	$ 2,097	$ —	$ —
Less benefit obligation as of end of year	2,926	2,567	306	302
Funded status as of end of year	$ (498)	$ (470)	$ (306)	$ (302)
Accumulated benefit obligation	$ 2,746	$ 2,419	n/a	n/a

(a) Plan assets include only the assets associated with pension plans subject to legal minimum funding standards. Plan assets associated with U.S. nonqualified pension plans are not included here because they are not protected from our creditors and therefore cannot be reflected as a reduction from our obligations under the pension plans. As a result, the reconciliation of funded status does not reflect the effect of plan assets that exist for all of our defined benefit plans. See Note 18 for the assets associated with certain U.S. nonqualified pension plans.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Amounts recognized in our balance sheet for our pension and other postretirement benefits plans include (in millions):

	Pension Plans		Other Postretirement Benefit Plans	
	December 31,		December 31,	
	2017	2016	2017	2016
Deferred charges and other assets, net	$ 5	$ 2	$ —	$ —
Accrued expenses	(14)	(13)	(19)	(19)
Other long-term liabilities	(489)	(459)	(287)	(283)
	$ (498)	$ (470)	$ (306)	$ (302)

The accumulated benefit obligations for certain of our pension plans exceed the fair values of the assets of those plans. For those plans, the following table presents the total projected benefit obligation, accumulated benefit obligation, and fair value of the plan assets (in millions).

	December 31,	
	2017	2016
Projected benefit obligation	$ 2,661	$ 2,322
Accumulated benefit obligation	2,526	2,210
Fair value of plan assets	2,180	1,870

Benefit payments that we expect to pay, including amounts related to expected future services that we expect to receive, are as follows for the years ending December 31 (in millions):

	Pension Benefits	Other Postretirement Benefits
2018	$ 162	$ 19
2019	219	19
2020	184	19
2021	180	19
2022	185	19
2023-2027	1,074	93

We plan to contribute approximately $131 million to our pension plans, including discretionary contributions of $100 million, and $19 million to our other postretirement benefit plans during 2018.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The components of net periodic benefit cost (credit) related to our defined benefit plans were as follows (in millions):

	Pension Plans			Other Postretirement Benefit Plans		
	Year Ended December 31,			Year Ended December 31,		
	2017	2016	2015	2017	2016	2015
Service cost	$ 123	$ 111	$ 109	$ 6	$ 7	$ 8
Interest cost	86	84	98	10	12	14
Expected return on plan assets	(150)	(139)	(133)	—	—	—
Amortization of:						
Net actuarial (gain) loss	53	49	62	(3)	(1)	—
Prior service credit	(20)	(20)	(22)	(16)	(16)	(18)
Special charges (credits)	4	(7)	7	—	—	—
Net periodic benefit cost (credit)	$ 96	$ 78	$ 121	$ (3)	$ 2	$ 4

Amortization of prior service credit shown in the preceding table was based on a straight-line amortization of the cost over the average remaining service period of employees expected to receive benefits under each respective plan. Amortization of the net actuarial (gain) loss shown in the preceding table was based on the straight-line amortization of the excess of the unrecognized (gain) loss over 10 percent of the greater of the projected benefit obligation or market-related value of plan assets (smoothed asset value) over the average remaining service period of active employees expected to receive benefits under each respective plan.

Pre-tax amounts recognized in other comprehensive income (loss) were as follows (in millions):

	Pension Plans			Other Postretirement Benefit Plans		
	Year Ended December 31,			Year Ended December 31,		
	2017	2016	2015	2017	2016	2015
Net gain (loss) arising during the year:						
Net actuarial gain (loss)	$ (73)	$ (145)	$ 24	$ (6)	$ 35	$ 26
Prior service cost	(4)	—	(22)	—	—	—
Net (gain) loss reclassified into income:						
Net actuarial (gain) loss	53	49	62	(3)	(1)	—
Prior service credit	(20)	(20)	(22)	(16)	(16)	(18)
Curtailment and settlement loss	4	—	7	—	—	—
Total changes in other comprehensive income (loss)	$ (40)	$ (116)	$ 49	$ (25)	$ 18	$ 8

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The pre-tax amounts in accumulated other comprehensive loss that have not yet been recognized as components of net periodic benefit cost (credit) were as follows (in millions):

	Pension Plans		Other Postretirement Benefit Plans	
	December 31,		December 31,	
	2017	2016	2017	2016
Net actuarial (gain) loss	$ 894	$ 878	$ (57)	$ (66)
Prior service credit	(121)	(145)	(42)	(58)
Total	$ 773	$ 733	$ (99)	$ (124)

The following pre-tax amounts included in accumulated other comprehensive loss as of December 31, 2017 are expected to be recognized as components of net periodic benefit cost (credit) during the year ending December 31, 2018 (in millions):

	Pension Plans	Other Postretirement Benefit Plans
Amortization of net actuarial (gain) loss	$ 66	$ (2)
Amortization of prior service credit	(19)	(11)
Total	$ 47	$ (13)

The weighted-average assumptions used to determine the benefit obligations were as follows:

	Pension Plans		Other Postretirement Benefit Plans	
	December 31,		December 31,	
	2017	2016	2017	2016
Discount rate	3.58%	4.08%	3.72%	4.26%
Rate of compensation increase	3.86%	3.81%	n/a	n/a

The discount rate assumption used to determine the benefit obligations as of December 31, 2017 and 2016 for the majority of our pension plans and other postretirement benefit plans was based on the Aon Hewitt AA Only Above Median yield curve and considered the timing of the projected cash outflows under our plans. This curve was designed by Aon Hewitt to provide a means for plan sponsors to value the liabilities of their pension plans or postretirement benefit plans. It is a hypothetical double-A yield curve represented by a series of annualized individual discount rates with maturities from one-half year to 99 years. Each bond issue underlying the curve is required to have an average rating of double-A when averaging all available ratings by Moody’s Investor Services, Standard and Poor’s Ratings Service, and Fitch Ratings. Only the bonds representing the 50 percent highest yielding issuances among those with average ratings of double-A are included in this yield curve.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

We based our discount rate assumption on the Aon Hewitt AA Only Above Median yield curve because we believe it is representative of the types of bonds we would use to settle our pension and other postretirement benefit plan liabilities as of those dates. We believe that the yields associated with the bonds used to develop this yield curve reflect the current level of interest rates.

The weighted-average assumptions used to determine the net periodic benefit cost were as follows:

	Pension Plans			Other Postretirement Benefit Plans		
	Year Ended December 31,			Year Ended December 31,		
	2017	2016	2015	2017	2016	2015
Discount rate	4.08%	4.45%	4.10%	4.26%	4.53%	4.13%
Expected long-term rate of return on plan assets	7.29%	7.28%	7.29%	n/a	n/a	n/a
Rate of compensation increase	3.81%	3.79%	3.78%	n/a	n/a	n/a

The assumed health care cost trend rates were as follows:

	December 31,	
	2017	2016
Health care cost trend rate assumed for the next year	7.30%	7.28%
Rate to which the cost trend rate was assumed to decline (the ultimate trend rate)	5.00%	5.00%
Year that the rate reaches the ultimate trend rate	2026	2026

Assumed health care cost trend rates impact the amounts reported for retiree health care plans. A one percentage-point increase or decrease in assumed health care cost trend rates would have an immaterial effect on the total of service and interest cost components and on the accumulated postretirement benefit obligation on our postretirement benefits.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following tables present the fair values of the assets of our pension plans (in millions) as of December 31, 2017 and 2016 by level of the fair value hierarchy. Assets categorized in Level 1 of the hierarchy are measured at fair value using a market approach based on quotations from national securities exchanges. Assets categorized in Level 2 of the hierarchy are measured at net asset value in a market that is not active. As previously noted, we do not fund or fully fund U.S. nonqualified and certain international pension plans that are not subject to funding requirements, and we do not fund our other postretirement benefit plans.

	Fair Value Measurements Using			Total as of December 31, 2017
	Level 1	Level 2	Level 3	
Equity securities:				
U.S. companies (a)	$ 571	$ —	$ —	$ 571
International companies	187	1	—	188
Preferred stock	4	—	—	4
Mutual funds:				
International growth	118	—	—	118
Index funds (b)	85	—	—	85
Corporate debt instruments	—	272	—	272
Government securities:				
U.S. Treasury securities	45	—	—	45
Other government securities	—	144	—	144
Common collective trusts (c)	—	621	—	621
Pooled separate accounts	—	192	—	192
Private funds	—	101	—	101
Insurance contract	—	18	—	18
Interest and dividends receivable	5	—	—	5
Cash and cash equivalents	85	1	—	86
Securities transactions payable, net	(22)	—	—	(22)
Total pension assets	$ 1,078	$ 1,350	$ —	$ 2,428

See notes on page 109.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	Fair Value Measurements Using			Total as of December 31, 2016
	Level 1	Level 2	Level 3	
Equity securities:				
U.S. companies (a)	$ 562	$ —	$ —	$ 562
International companies	164	—	—	164
Preferred stock	3	—	—	3
Mutual funds:				
International growth	90	—	—	90
Index funds (b)	230	—	—	230
Corporate debt instruments	—	280	—	280
Government securities:				
U.S. Treasury securities	52	—	—	52
Other government securities	—	158	—	158
Common collective trusts (c)	—	434	—	434
Private funds	—	76	—	76
Insurance contract	—	18	—	18
Interest and dividends receivable	5	—	—	5
Cash and cash equivalents	56	16	—	72
Securities transactions payable, net	(47)	—	—	(47)
Total pension assets	$ 1,115	$ 982	$ —	$ 2,097

(a) Equity securities are held in a wide range of industrial sectors, including consumer goods, information technology, healthcare, industrials, and financial services.
(b) This class includes primarily investments in approximately 70 percent equities and 30 percent bonds as of December 31, 2017. As of December 31, 2016, the class included primarily investments in approximately 50 percent equities and 50 percent bonds.
(c) This class includes primarily investments in approximately 80 percent equities and 20 percent bonds as of December 31, 2017. As of December 31, 2016, the class included primarily investments in approximately 90 percent equities and 10 percent bonds.

The investment policies and strategies for the assets of our pension plans incorporate a well-diversified approach that is expected to earn long-term returns from capital appreciation and a growing stream of current income. This approach recognizes that assets are exposed to risk and the market value of the pension plans' assets may fluctuate from year to year. Risk tolerance is determined based on our financial ability to withstand risk within the investment program and the willingness to accept return volatility. In line with the investment return objective and risk parameters, the pension plans' mix of assets includes a diversified portfolio of equity and fixed-income investments. Equity securities include international stocks and a blend of U.S. growth and value stocks of various sizes of capitalization. Fixed income securities include bonds and notes issued by the U.S. government and its agencies, corporate bonds, and mortgage-backed securities. The aggregate asset allocation is reviewed on an annual basis. As of December 31, 2017, the target allocations for plan assets under our primary pension plan are 70 percent equity securities and 30 percent fixed income investments.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The expected long-term rate of return on plan assets is based on a forward-looking expected asset return model. This model derives an expected rate of return based on the target asset allocation of a plan's assets. The underlying assumptions regarding expected rates of return for each asset class reflect Aon Hewitt's best expectations for these asset classes. The model reflects the positive effect of periodic rebalancing among diversified asset classes. We select an expected asset return that is supported by this model.

Defined Contribution Plans
We have defined contribution plans that cover most of our employees. Our contributions to these plans are based on employees' compensation and/or a partial match of employee contributions to the plans. Our contributions to these defined contribution plans were $70 million, $67 million, and $65 million for the years ended December 31, 2017, 2016, and 2015, respectively.

13. STOCK-BASED COMPENSATION

Overview
Under our 2011 Omnibus Stock Incentive Plan (the OSIP), various stock and stock-based awards may be granted to employees and non-employee directors. Awards available under the OSIP include options to purchase shares of common stock, performance awards that vest upon the achievement of an objective performance goal, stock appreciation rights, restricted stock that vests over a period determined by our compensation committee, and dividend equivalent rights (DERs). The OSIP was approved by our stockholders on April 28, 2011 and re-approved by our stockholders on May 12, 2016. As of December 31, 2017, 9,409,188 shares of our common stock remained available to be awarded under the OSIP.

We also maintain other stock-based compensation plans under which previously granted equity awards remain outstanding. No additional grants may be awarded under these plans.

The following table reflects activity related to our stock-based compensation arrangements (in millions):

	Year Ended December 31,		
	2017	2016	2015
Stock-based compensation expense:			
Restricted stock	$ 58	$ 52	$ 47
Performance awards	19	15	11
Stock options	—	1	1
Total stock-based compensation expense	$ 77	$ 68	$ 59
Tax benefit recognized on stock-based compensation expense	$ 27	$ 24	$ 21
Tax benefit realized for tax deductions resulting from exercises and vestings	44	33	66
Effect of tax deductions in excess of recognized stock-based compensation expense (a)	24	22	44

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(a) Effective January 1, 2016, the effect of tax deductions in excess of recognized stock-based compensation expense is reported as an operating cash flow. These amounts were previously reported as financing cash flows.

Our significant stock-based compensation arrangement is discussed below.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Restricted Stock

Restricted stock is granted to employees and non-employee directors. Restricted stock granted to employees vests in accordance with individual written agreements between the participants and us, usually in equal annual installments over a period of three years beginning one year after the date of grant. Restricted stock granted to our non-employee directors vests in equal annual installments over a period of three years beginning one year after the date of grant. The fair value of each restricted stock per share is equal to the market price of our common stock. A summary of the status of our restricted stock awards is presented in the following table.

	Number of Shares	Weighted-Average Grant-Date Fair Value Per Share
Nonvested shares as of January 1, 2017	1,566,950	$ 60.68
Granted	739,393	79.32
Vested	(897,246)	61.76
Forfeited	(8,057)	61.22
Nonvested shares as of December 31, 2017	1,401,040	69.82

As of December 31, 2017, there was $61 million of unrecognized compensation cost related to outstanding unvested restricted stock awards, which is expected to be recognized over a weighted-average period of approximately two years.

The following table reflects activity related to our restricted stock (in millions, except per share data):

	Year Ended December 31,		
	2017	2016	2015
Weighted-average grant-date fair value per share of restricted stock granted	$ 79.32	$ 59.00	$ 70.07
Fair value of restricted stock vested	71	46	69

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

14. INCOME TAXES

Tax Reform
On December 22, 2017, Tax Reform was enacted, which resulted in significant changes to the U.S. Internal Revenue Code of 1986, as amended (the Code) and was effective beginning on January 1, 2018. The most significant changes affecting us are as follows:

- reduction in the statutory income tax rate from 35 percent to 21 percent;
- repeal of the manufacturing deduction;
- deduction for all of the costs to acquire or construct certain business assets in the year they are placed in service through 2022;
- shift from a worldwide system of taxation to a territorial system of taxation, resulting in a minimum tax on the income of international subsidiaries (the global intangible low-taxes income (GILTI) tax) rather than a tax deferral on such earnings in certain circumstances; and
- assessment of a one-time transition tax on deemed repatriated earnings and profits from our international subsidiaries.

We reflected an overall income tax benefit of $1.9 billion for the year ended December 31, 2017 with respect to Tax Reform as a result of the following:

- We remeasured our U.S. deferred tax assets and liabilities using the 21 percent rate, which resulted in a tax benefit and a reduction to our net deferred tax liabilities of $2.6 billion.
- We recognized a one-time transition tax of $734 million on the deemed repatriation of previously undistributed accumulated earnings and profits of our international subsidiaries based on approximately $4.7 billion of the combined earnings and profits of our international subsidiaries that have not been distributed to us. This transition tax will be remitted to the Internal Revenue Service (IRS) over the eight-year period provided in the Code beginning in 2018.
- We accrued withholding tax of $47 million on a portion of the cash held by one of our international subsidiaries that we have deemed to not be permanently reinvested in our operations in that country.

Because of the significant and complex changes to the Code from Tax Reform, including the need for regulatory guidance from the IRS to properly account for many of the provisions, the SEC issued Staff Accounting Bulletin No. 118, “Income Tax Accounting Implications of the Tax Cuts and Jobs Act,” (SAB 118) to provide for a measurement period of up to one year for adjustments to be made to account for the effects of Tax Reform. Specifically, SAB 118 requires that the effects of Tax Reform be recorded for items where the accounting is complete, as well as for items where a reasonable estimate can be made (referred to as provisional amounts). For items where reasonable estimates cannot be made, provisional amounts should not be recorded and those items should continue to be accounted for under the Code prior to changes from Tax Reform until a reasonable estimate can be made.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

See *"Details of the Tax Reform Adjustment"* below, which more fully describes the components of our $1.9 billion adjustment, including the components for which we recorded a provisional amount and the components that are incomplete.

Income Statement Components
Income before income tax expense (benefit) was as follows (in millions):

	Year Ended December 31,		
	2017	2016	2015
U.S. operations	$ 2,283	$ 1,733	$ 5,327
International operations	924	1,449	644
Income before income tax expense (benefit)	$ 3,207	$ 3,182	$ 5,971

Statutory income tax rates applicable to the countries in which we operate were as follows:

	Year Ended December 31,		
	2017	2016	2015
U.S. (a)	35%	35%	35%
Canada	15%	15%	15%
U.K.	19%	20%	20%
Ireland	13%	13%	13%
Aruba (b)	n/a	7%	7%

(a) Statutory income tax rate was reduced to 21 percent effective January 1, 2018 as described in "Tax Reform" above.
(b) Statutory income tax rate applicable through the date of the Aruba Disposition as described in Note 2.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following is a reconciliation of income tax expense (benefit) computed by applying statutory income tax rates as reflected in the preceding table to actual income tax expense (benefit) related to our operations (in millions):

	Year Ended December 31, 2017					
	U.S.		International		Total	
	Amount	Percent	Amount	Percent	Amount	Percent
Income tax expense at statutory rates	$ 799	35.0 %	$ 158	17.1%	$ 957	29.8 %
U.S. state and Canadian provincial tax expense, net of federal income tax effect	37	1.6 %	46	5.0%	83	2.6 %
Permanent differences:						
Manufacturing deduction	(42)	(1.8)%	—	—	(42)	(1.3)%
Other	(9)	(0.4)%	—	—	(9)	(0.3)%
Change in tax law	(1,862)	(81.6)%	—	—	(1,862)	(58.1)%
Tax effects of income associated with noncontrolling interests	(31)	(1.4)%	—	—	(31)	(1.0)%
Other, net	(52)	(2.3)%	7	0.8%	(45)	(1.4)%
Income tax expense (benefit)	$ (1,160)	(50.9)%	$ 211	22.9%	$ (949)	(29.7)%

	Year Ended December 31, 2016					
	U.S.		International		Total	
	Amount	Percent	Amount	Percent	Amount	Percent
Income tax expense at statutory rates	$ 606	35.0 %	$ 256	17.7 %	$ 862	27.1 %
U.S. state and Canadian provincial tax expense, net of federal income tax effect	5	0.3 %	31	2.1 %	36	1.1 %
Permanent differences:						
Manufacturing deduction	(22)	(1.3)%	—	—	(22)	(0.7)%
Other	(3)	(0.2)%	(10)	(0.7)%	(13)	(0.4)%
Change in tax law	—	—	(7)	(0.5)%	(7)	(0.2)%
Tax effects of income associated with noncontrolling interests	(44)	(2.5)%	—	—	(44)	(1.4)%
Other, net	(37)	(2.1)%	(10)	(0.7)%	(47)	(1.5)%
Income tax expense	$ 505	29.2 %	$ 260	17.9 %	$ 765	24.0 %

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	Year Ended December 31, 2015					
	U.S.		International		Total	
	Amount	Percent	Amount	Percent	Amount	Percent
Income tax expense at statutory rates	$ 1,864	35.0 %	$ 92	14.3 %	$ 1,956	32.8 %
U.S. state and Canadian provincial tax expense, net of federal income tax effect	45	0.8 %	73	11.3 %	118	2.0 %
Permanent differences:						
Manufacturing deduction	(102)	(1.9)%	—	—	(102)	(1.7)%
Other	(18)	(0.3)%	(5)	(0.8)%	(23)	(0.4)%
Change in tax law	—	—	(17)	(2.6)%	(17)	(0.3)%
Tax effects of income associated with noncontrolling interests	(39)	(0.7)%	—	—	(39)	(0.7)%
Other, net	(25)	(0.5)%	2	0.3 %	(23)	(0.4)%
Income tax expense	$ 1,725	32.4 %	$ 145	22.5 %	$ 1,870	31.3 %

Components of income tax expense (benefit) related to our operations were as follows (in millions):

	Year Ended December 31, 2017		
	U.S.	International	Total
Current:			
Country	$ 1,305	$ 194	$ 1,499
U.S. state / Canadian provincial	34	61	95
Total current	1,339 (a)	255	1,594
Deferred:			
Country	(2,522)	(29)	(2,551)
U.S. state / Canadian provincial	23	(15)	8
Total deferred	(2,499) (b)	(44)	(2,543)
Income tax expense (benefit)	$ (1,160)	$ 211	$ (949)

See notes on page 116.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	Year Ended December 31, 2016		
	U.S.	International	Total
Current:			
Country	$ 294	$ 194	$ 488
U.S. state / Canadian provincial	12	35	47
Total current	306	229	535
Deferred:			
Country	203	35	238
U.S. state / Canadian provincial	(4)	(4)	(8)
Total deferred	199	31	230
Income tax expense	$ 505	$ 260	$ 765

	Year Ended December 31, 2015		
	U.S.	International	Total
Current:			
Country	$ 1,513	$ 64	$ 1,577
U.S. state / Canadian provincial	85	43	128
Total current	1,598	107	1,705
Deferred:			
Country	143	8	151
U.S. state / Canadian provincial	(16)	30	14
Total deferred	127	38	165
Income tax expense	$ 1,725	$ 145	$ 1,870

(a) Current income tax expense includes the effect of our $781 million Tax Reform adjustment as described in "Tax Reform" above.
(b) Deferred income tax benefit includes the effect of our $2.6 billion Tax Reform adjustment as described in "Tax Reform" above.

Income Taxes Paid

Income taxes paid to U.S. and international taxing authorities were as follows (in millions):

	Year Ended December 31,		
	2017	2016	2015
U.S.	$ 239	$ 241	$ 2,092
International	171	203	1
Income taxes paid, net	$ 410	$ 444	$ 2,093

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Deferred Income Tax Assets and Liabilities

The tax effects of significant temporary differences representing deferred income tax assets and liabilities were as follows (in millions):

	December 31,	
	2017	2016
Deferred income tax assets:		
Tax credit carryforwards	$ 69	$ 65
Net operating losses (NOLs)	492	374
Inventories	135	93
Compensation and employee benefit liabilities	179	344
Environmental liabilities	47	69
Other	112	100
Total deferred income tax assets	1,034	1,045
Valuation allowance	(498)	(374)
Net deferred income tax assets	536	671
Deferred income tax liabilities:		
Property, plant, and equipment	4,545	6,900
Deferred turnaround costs	272	450
Inventories	243	356
Investments	77	253
Other	107	73
Total deferred income tax liabilities	5,244	8,032
Net deferred income tax liabilities	$ 4,708	$ 7,361

Our deferred income tax assets and liabilities as of December 31, 2017 were impacted by the remeasurement of our U.S. temporary differences using the 21 percent statutory income tax rate as more fully described in *"Tax Reform"* above and *"Details of the Tax Reform Adjustment"* below.

We had the following income tax credit and loss carryforwards as of December 31, 2017 (in millions):

	Amount	Expiration
U.S. state income tax credits	$ 76	2018 through 2031
U.S. state income tax credits	11	Unlimited
U.S. state NOLs (gross amount)	9,441	2018 through 2037

We have recorded a valuation allowance as of December 31, 2017 and 2016 due to uncertainties related to our ability to utilize some of our deferred income tax assets, primarily consisting of certain U.S. state income tax credits and NOLs, before they expire. The valuation allowance is based on our estimates of taxable income in the various jurisdictions in which we operate and the period over which deferred income tax assets will be recoverable. During 2017, the valuation allowance increased by $124 million, primarily due to increases in State NOLs. The realization of net deferred income tax assets recorded as of December 31, 2017 is primarily dependent upon our ability to generate future taxable income in certain U.S. states.

As described in *"Tax Reform"* above, one of the most significant changes in Tax Reform is the shift from a worldwide system of taxation to a territorial system. The shift to a territorial system allows us to distribute cash via a dividend from our international subsidiaries with a full dividend received deduction. As a result, we will not recognize U.S. federal deferred taxes for the future tax consequences attributable to differences between financial statement carrying amounts of existing assets and liabilities and the respective tax basis for our international subsidiaries. As of December 31, 2017, we recognized a one-time transition tax of $734 million on approximately $4.7 billion of combined earnings and profits of our international subsidiaries. Because of the deemed repatriation of these accumulated earnings and profits, there are no longer any U.S. federal income tax consequences associated with the repatriation of any of the $3.2 billion of cash and temporary cash investments held by our international subsidiaries as of December 31, 2017. However, certain countries in which our international subsidiaries are organized impose withholding taxes on cash distributed outside of those countries. We have accrued for withholding taxes on a portion of the cash held by one of our international subsidiaries that we have deemed to not be permanently reinvested in our operations in that country.

Details of the Tax Reform Adjustment

The following table details the components of our adjustment (in millions) to reflect the effects of Tax Reform for the year ended December 31, 2017, including (i) whether such amounts are complete, provisional, or incomplete, and (ii) the additional information that we need to obtain in order to complete the accounting as required by SAB 118. See *"Tax Reform"* above for a discussion of the provisions of SAB 118.

	Accounting Status	Amount
Income tax benefit from the remeasurement of U.S. deferred income tax assets and liabilities	Complete	$ (2,643)
Tax on the deemed repatriation of the accumulated earnings and profits of our international subsidiaries	Provisional	734
Recognition of foreign withholding tax, net of U.S. federal tax benefit	Complete	47
Deductibility of certain executive compensation expense	Incomplete	—
Income tax expense associated with the statutory income tax rate differential on accrual to return adjustments that may be identified upon completion of our U.S. federal income tax return in 2018	Incomplete	—
Foreign tax credit available to offset the tax on deemed repatriation of the accumulated earnings and profits of our international subsidiaries	Incomplete	—
Estimated Tax Reform benefit		$ (1,862)

We recorded a provisional amount of $734 million for the tax on the deemed repatriation of the accumulated earnings and profits of our international subsidiaries. We continue to gather additional information in order

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

to more accurately compute this tax. Any associated U.S. state taxes will be recorded once the federal estimate is finalized. We anticipate this information will be available in the second half of 2018.

Our accounting for the following items of Tax Reform are incomplete, and we have not yet been able to make reasonable estimates of the effects of these items. Therefore, no provisional amounts were recorded.

- *Deductibility of certain executive compensation*: It is unclear from Tax Reform if the future payments related to existing deferred compensation plans to the covered executives will be subject to the $1 million deduction limitation or if such plans are considered grandfathered. We currently have deferred tax assets related to certain benefit plans that may be determined to be subject to the excess compensation limitations; however, the impact is not expected to be material. Additional clarifying guidance from the IRS is necessary to determine the proper treatment, and we expect such guidance will be released by the IRS in the near future.
- *Tax rate differential amount related to accrual to return adjustments* : We use estimates to compute certain adjustments related to current and deferred income taxes. Upon the filing of our U.S. federal income tax return in the third quarter of 2018, adjustments will be recorded in our financial statements to reflect our actual payment. The U.S. tax rate differential (35 percent for current vs. 21 percent for deferred items) cannot be practically estimated until such true-up adjustments are known.
- *Foreign tax credits on deemed repatriation amount* : Additional information is required to determine the amount of available foreign tax credits, if any, that can be used to reduce our tax on the deemed repatriation of the accumulated earnings and profits of our international subsidiaries. This includes information needed to compute any foreign tax credit limitations and information to accurately compute the income taxes paid from our various foreign subsidiaries. We anticipate this information will be available in the second half of 2018.

Other significant Tax Reform provisions that are not yet effective, but may impact our income tax expense in future years include:

- an exemption from U.S. tax on dividends of future foreign earnings;
- a limitation on the current deductibility of net interest expense in excess of 30 percent of adjusted taxable income;
- a limitation of net operating losses generated after fiscal 2018 to 80 percent of taxable income;
- an incremental tax (base erosion anti-abuse tax, or BEAT) on excessive amounts paid to international related parties;
- a minimum tax on certain foreign earnings in excess of 10 percent of the international subsidiaries’ tangible assets (the GILTI tax); and
- a deduction equal to 37.5 percent of our foreign-derived intangible income.

We are still evaluating whether to make a policy election to treat the GILTI tax as a period expense or to provide U.S. deferred taxes on temporary differences that are expected to generate GILTI income when they reverse in future years.

Unrecognized Tax Benefits
The following is a reconciliation of the change in unrecognized tax benefits, excluding related penalties and interest, (in millions):

	Year Ended December 31,		
	2017	2016	2015
Balance as of beginning of year	$ 936	$ 964	$ 989
Additions based on tax positions related to the current year	33	36	36
Additions for tax positions related to prior years	15	11	83
Reductions for tax positions related to prior years	(42)	(46)	(82)
Reductions for tax positions related to the lapse of applicable statute of limitations	(1)	(3)	(3)
Settlements	—	(237)	(59)
Reclassification of uncertain tax receivable to long-term receivable from IRS	—	211	—
Balance as of end of year	$ 941	$ 936	$ 964

As of December 31, 2017, the balance in unrecognized tax benefits included $274 million of tax refunds that we intend to claim by amending various of our income tax returns for 2010 through 2016. We intend to propose that incentive payments received from the U.S. federal government for blending biofuels into refined petroleum products be excluded from taxable income during these periods. However, due to the complexity of this matter and uncertainties with respect to the interpretation of the Code, we concluded that the refund claims included in the following table cannot be recognized in our financial statements. As a result, these amounts are not included in our uncertain tax position liabilities as of December 31, 2017, 2016, and 2015 even though they are reflected in the preceding table.

The following is a reconciliation of unrecognized tax benefits reflected in the preceding table to our uncertain tax position liabilities that are presented in our balance sheets (in millions).

	December 31,	
	2017	2016
Unrecognized tax benefits	$ 941	$ 936
Tax refund claim not presented in our balance sheets	(274)	(433)
Other	77	(5)
Uncertain tax position liabilities presented in our balance sheets	$ 744	$ 498

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Amounts recognized in our balance sheets for uncertain tax positions include (in millions):

	December 31,	
	2017	2016
Income taxes payable	$ —	$ (7)
Other long-term liabilities	(723)	(465)
Deferred tax liabilities	(21)	(26)
Uncertain tax position liabilities presented in our balance sheets	$ (744)	$ (498)

As of December 31, 2017 and 2016, there were $793 million and $756 million, respectively, of unrecognized tax benefits that if recognized would affect our annual effective tax rate.

Penalties and interest during the years ended December 31, 2017, 2016, and 2015 were immaterial. Accrued penalties and interest totaled $77 million and $70 million as of December 31, 2017 and 2016, respectively, excluding the U.S. federal and state income tax effects related to interest.

During the next 12 months, it is reasonably possible that tax audit resolutions could reduce unrecognized tax benefits, excluding interest, either because the tax positions are sustained on audit or because we agree to their disallowance. We do not expect these reductions to have a significant impact on our financial statements because such reductions would not significantly affect our annual effective tax rate.

U.S. Tax Returns Under Audit

Federal

As of December 31, 2017, our tax years for 2010 through 2015 were under audit by the IRS. The IRS has proposed adjustments to our taxable income for certain open years. We are currently contesting the proposed adjustments with the Office of Appeals of the IRS for certain open years and do not expect that the ultimate disposition of these adjustments will result in a material change to our financial position, results of operations, or liquidity. We are continuing to work with the IRS to resolve these matters and we believe that they will be resolved for amounts consistent with recorded amounts of unrecognized tax benefits associated with these matters.

State

As of December 31, 2017, our tax years for 2004 through 2008 and 2011 through 2014 were under audit by the state of California for certain tax issues. We do not expect the ultimate disposition of these issues will result in a material change to our financial position, results of operations, or liquidity. We believe these matters will be resolved for amounts consistent with our recorded amounts of unrecognized tax benefits associated with these matters.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

15. EARNINGS PER COMMON SHARE

Earnings per common share were computed as follows (dollars and shares in millions, except per share amounts):

	Year Ended December 31,					
	2017		2016		2015	
	Participating Securities	Common Stock	Participating Securities	Common Stock	Participating Securities	Common Stock
Earnings per common share:						
Net income attributable to Valero stockholders		$ 4,065		$ 2,289		$ 3,990
Less dividends paid:						
Common stock		1,238		1,108		845
Participating securities		4		3		3
Undistributed earnings		$ 2,823		$ 1,178		$ 3,142
Weighted-average common shares outstanding	2	442	1	461	2	497
Earnings per common share:						
Distributed earnings	$ 2.80	$ 2.80	$ 2.40	$ 2.40	$ 1.70	$ 1.70
Undistributed earnings	6.37	6.37	2.54	2.54	6.30	6.30
Total earnings per common share	$ 9.17	$ 9.17	$ 4.94	$ 4.94	$ 8.00	$ 8.00
Earnings per common share – assuming dilution:						
Net income attributable to Valero stockholders		$ 4,065		$ 2,289		$ 3,990
Weighted-average common shares outstanding		442		461		497
Common equivalent shares		2		3		3
Weighted-average common shares outstanding – assuming dilution		444		464		500
Earnings per common share – assuming dilution		$ 9.16		$ 4.94		$ 7.99

Participating securities include restricted stock and performance awards granted under our 2011 Omnibus Stock Incentive Plan.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

16. SEGMENT INFORMATION

Effective January 1, 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, we created a new reportable segment — VLP. The results of the VLP segment, which include the results of our majority-owned master limited partnership referred to by the same name, were transferred from the refining segment. Our prior period segment information has been retrospectively adjusted to reflect our current segment presentation.

As a result, we have three reportable segments as follows:

- *Refining segment* includes our refining operations, the associated marketing activities, and certain logistics assets, which are not owned by VLP, that support our refining operations;
- *Ethanol segment* includes our ethanol operations, the associated marketing activities, and logistics assets that support our ethanol operations; and
- *VLP segment* includes the results of VLP, which provides transportation and terminaling services to our refining segment.

Operations that are not included in any of the reportable segments are included in the corporate category.

Our reportable segments are strategic business units that offer different products and services. They are managed separately as each business requires unique technologies and marketing strategies. Performance is evaluated based on segment operating income, which includes revenues and expenses that are directly attributable to the management of the respective segment. Intersegment sales are generally derived from transactions made at prevailing market rates.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table reflects activity related to our reportable segments (in millions):

	Refining	Ethanol	VLP	Corporate and Eliminations	Total
Year ended December 31, 2017:					
Operating revenues:					
Operating revenues from external customers	$ 90,651	$ 3,324	$ —	$ 5	$ 93,980
Intersegment revenues	6	176	452	(634)	—
Total operating revenues	90,657	3,500	452	(629)	93,980
Cost of sales:					
Cost of materials and other	80,865	2,804	—	(632)	83,037
Operating expenses (excluding depreciation and amortization expense reflected below)	3,917	443	104	(2)	4,462
Depreciation and amortization expense	1,800	81	53	—	1,934
Total cost of sales	86,582	3,328	157	(634)	89,433
Other operating expenses	58	—	3	—	61
General and administrative expenses (excluding depreciation and amortization expense reflected below)	—	—	—	835	835
Depreciation and amortization expense	—	—	—	52	52
Operating income by segment	$ 4,017	$ 172	$ 292	$ (882)	$ 3,599
Total expenditures for long-lived assets	$ 1,710	$ 84	$ 110	$ 44	$ 1,948
Year ended December 31, 2016:					
Operating revenues:					
Operating revenues from external customers	$ 71,968	$ 3,691	$ —	$ —	$ 75,659
Intersegment revenues	—	210	363	(573)	—
Total operating revenues	71,968	3,901	363	(573)	75,659
Cost of sales:					
Cost of materials and other	63,405	3,130	—	(573)	65,962
Operating expenses (excluding depreciation and amortization expense reflected below)	3,696	415	96	—	4,207
Depreciation and amortization expense	1,734	66	46	—	1,846
Lower of cost or market inventory valuation adjustment	(697)	(50)	—	—	(747)
Total cost of sales	68,138	3,561	142	(573)	71,268
General and administrative expenses (excluding depreciation and amortization expense reflected below)	—	—	—	715	715
Depreciation and amortization expense	—	—	—	48	48
Asset impairment loss	56	—	—	—	56
Operating income by segment	$ 3,774	$ 340	$ 221	$ (763)	$ 3,572
Total expenditures for long-lived assets	$ 1,867	$ 68	$ 23	$ 38	$ 1,996

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	Refining	Ethanol	VLP	Corporate and Eliminations	Total
Year Ended December 31, 2015:					
Operating revenues:					
Operating revenues from external customers	$ 84,521	$ 3,283	$ —	$ —	$ 87,804
Intersegment revenues	—	151	244	(395)	—
Total operating revenues	84,521	3,434	244	(395)	87,804
Cost of sales:					
Cost of materials and other	71,512	2,744	—	(395)	73,861
Operating expenses (excluding depreciation and amortization expense reflected below)	3,689	448	106	—	4,243
Depreciation and amortization expense	1,699	50	46	—	1,795
Lower of cost or market inventory valuation adjustment	740	50	—	—	790
Total cost of sales	77,640	3,292	152	(395)	80,689
General and administrative expenses (excluding depreciation and amortization expense reflected below)	—	—	—	710	710
Depreciation and amortization expense	—	—	—	47	47
Operating income by segment	$ 6,881	$ 142	$ 92	$ (757)	$ 6,358
Total expenditures for long-lived assets	$ 2,216	$ 67	$ 38	$ 29	$ 2,350

Our principal products include conventional and California Air Resources Board gasolines, RBOB (reformulated gasoline blendstock for oxygenate blending), gasoline blendstocks, ultra-low-sulfur diesel, middle distillates, and jet fuel. Other product revenues primarily include petrochemicals, gas oils, No. 6 fuel oil, petroleum coke, sulfur, and asphalt. Operating revenues from external customers by reportable segment for our principal products were as follows (in millions):

	Year Ended December 31,		
	2017	2016	2015
Refining:			
Gasolines and blendstocks	$ 40,362	$ 33,450	$ 38,983
Distillates	42,074	32,576	38,093
Other product revenues	8,215	5,942	7,445
Total refining revenues	90,651	71,968	84,521
Ethanol:			
Ethanol	2,764	3,105	2,628
Distillers grains	560	586	655
Total ethanol revenues	3,324	3,691	3,283
Corporate – other revenues	5	—	—
Total revenues from external customers	$ 93,980	$ 75,659	$ 87,804

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Operating revenues by geographic area are shown in the following table (in millions). The geographic area is based on location of customer and no customer accounted for 10 percent or more of our operating revenues.

	Year Ended December 31,		
	2017	2016	2015
U.S.	$ 66,614	$ 51,479	$ 60,319
Canada	7,039	6,115	6,841
U.K. and Ireland	11,556	10,797	11,232
Other countries	8,771	7,268	9,412
Total operating revenues	$ 93,980	$ 75,659	$ 87,804

Long-lived assets include property, plant, and equipment and certain long-lived assets included in "deferred charges and other assets, net." Long-lived assets by geographic area consisted of the following (in millions):

	December 31,	
	2017	2016
U.S.	$ 26,083	$ 25,359
Canada	1,915	1,816
U.K. and Ireland	1,063	967
Total long-lived assets	$ 29,061	$ 28,142

Total assets by reportable segment were as follows (in millions):

	December 31,	
	2017	2016
Refining	$ 40,382	$ 38,095
Ethanol	1,344	1,316
VLP	1,517	979
Corporate and eliminations	6,915	5,783
Total assets	$ 50,158	$ 46,173

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

17. SUPPLEMENTAL CASH FLOW INFORMATION

In order to determine net cash provided by operating activities, net income is adjusted by, among other things, changes in current assets and current liabilities as follows (in millions):

	Year Ended December 31,		
	2017	2016	2015
Decrease (increase) in current assets:			
Receivables, net	$ (870)	$ (1,531)	$ 1,294
Inventories	(516)	771	(222)
Prepaid expenses and other	151	47	(149)
Increase (decrease) in current liabilities:			
Accounts payable	1,842	1,556	(1,787)
Accrued expenses	21	117	(40)
Taxes other than income taxes payable	172	82	(74)
Income taxes payable	489	(66)	(328)
Changes in current assets and current liabilities	$ 1,289	$ 976	$ (1,306)

Cash flows related to interest and income taxes were as follows (in millions):

	Year Ended December 31,		
	2017	2016	2015
Interest paid in excess of amount capitalized	$ 457	$ 427	$ 416
Income taxes paid, net	410	444	2,093

Cash flows reflected as “other financing activities, net” for the year ended December 31, 2016 included the payment of a long-term liability of $137 million owed to a joint venture partner associated with an owner-method joint venture investment.

Noncash investing and financing activities for the year ended December 31, 2017 included the recognition of (i) a capital lease asset and related obligation associated with an agreement for storage tanks near three of our refineries as described in Note 8 and (ii) terminal assets and related obligation recorded under owner accounting as described in Note 9.

There were no significant noncash investing and financing activities for the year ended December 31, 2016.

Noncash investing and financing activities for the year ended December 31, 2015 included the recognition of a capital lease asset and related obligation associated with an agreement for storage tanks near one of our refineries.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

18. FAIR VALUE MEASUREMENTS

General

U.S. GAAP requires or permits certain assets and liabilities to be measured at fair value on a recurring or nonrecurring basis in our balance sheets, and those assets and liabilities are presented below under *"Recurring Fair Value Measurements"* and *"Nonrecurring Fair Value Measurements."* Assets and liabilities measured at fair value on a recurring basis, such as derivative financial instruments, are measured at fair value at the end of each reporting period. Assets and liabilities measured at fair value on a nonrecurring basis, such as the impairment of property, plant and equipment, are measured at fair value in particular circumstances.

U.S. GAAP also requires the disclosure of the fair values of financial instruments when an option to elect fair value accounting has been provided, but such election has not been made. A debt obligation is an example of such a financial instrument. The disclosure of the fair values of financial instruments not recognized at fair value in our balance sheet is presented below under *"Other Financial Instruments."*

U.S. GAAP provides a framework for measuring fair value and establishes a three-level fair value hierarchy that prioritizes inputs to valuation techniques based on the degree to which objective prices in external active markets are available to measure fair value. Following is a description of each of the levels of the fair value hierarchy.

- *Level 1* - Observable inputs, such as unadjusted quoted prices in active markets for identical assets or liabilities.

- *Level 2* - Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.

- *Level 3* - Unobservable inputs for the asset or liability. Unobservable inputs reflect our own assumptions about what market participants would use to price the asset or liability. The inputs are developed based on the best information available in the circumstances, which might include occasional market quotes or sales of similar instruments or our own financial data such as internally developed pricing models, discounted cash flow methodologies, as well as instruments for which the fair value determination requires significant judgment.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Recurring Fair Value Measurements

The following tables present information (in millions) about our assets and liabilities recognized at their fair values in our balance sheets categorized according to the fair value hierarchy of the inputs utilized by us to determine the fair values as of December 31, 2017 and 2016.

We have elected to offset the fair value amounts recognized for multiple similar derivative contracts executed with the same counterparty, including any related cash collateral assets or obligations as shown below; however, fair value amounts by hierarchy level are presented in the following tables on a gross basis. We have no derivative contracts that are subject to master netting arrangements that are reflected gross on the balance sheet.

	December 31, 2017							
	Fair Value Hierarchy							
	Level 1	Level 2	Level 3	Total Gross Fair Value	Effect of Counter-party Netting	Effect of Cash Collateral Netting	Net Carrying Value on Balance Sheet	Cash Collateral Paid or Received Not Offset
Assets:								
Commodity derivative contracts	$ 875	$ 19	$ —	$ 894	$ (893)	$ —	$ 1	$ —
Investments of certain benefit plans	65	—	8	73	n/a	n/a	73	n/a
Total	$ 940	$ 19	$ 8	$ 967	$ (893)	$ —	$ 74	
Liabilities:								
Commodity derivative contracts	$ 955	$ 14	$ —	$ 969	$ (893)	$ (76)	$ —	$ (102)
Environmental credit obligations	—	104	—	104	n/a	n/a	104	n/a
Physical purchase contracts	—	6	—	6	n/a	n/a	6	n/a
Foreign currency contracts	7	—	—	7	n/a	n/a	7	n/a
Total	$ 962	$ 124	$ —	$ 1,086	$ (893)	$ (76)	$ 117	

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	December 31, 2016							
	Fair Value Hierarchy							
	Level 1	Level 2	Level 3	Total Gross Fair Value	Effect of Counter-party Netting	Effect of Cash Collateral Netting	Net Carrying Value on Balance Sheet	Cash Collateral Paid or Received Not Offset
Assets:								
Commodity derivative contracts	$ 874	$ 38	$ —	$ 912	$ (875)	$ —	$ 37	$ —
Foreign currency contracts	3	—	—	3	n/a	n/a	3	n/a
Investments of certain benefit plans	58	—	11	69	n/a	n/a	69	n/a
Total	$ 935	$ 38	$ 11	$ 984	$ (875)	$ —	$ 109	
Liabilities:								
Commodity derivative contracts	$ 872	$ 23	$ —	$ 895	$ (875)	$ (20)	$ —	$ (88)
Environmental credit obligations	—	188	—	188	n/a	n/a	188	n/a
Physical purchase contracts	—	5	—	5	n/a	n/a	5	n/a
Total	$ 872	$ 216	$ —	$ 1,088	$ (875)	$ (20)	$ 193	

A description of our assets and liabilities recognized at fair value along with the valuation methods and inputs we used to develop their fair value measurements are as follows:

- Commodity derivative contracts consist primarily of exchange-traded futures and swaps, and as disclosed in Note 19, some of these contracts are designated as hedging instruments. These contracts are measured at fair value using the market approach. Exchange-traded futures are valued based on quoted prices from the exchange and are categorized in Level 1 of the fair value hierarchy. Swaps are priced using third-party broker quotes, industry pricing services, and exchange-traded curves, with appropriate consideration of counterparty credit risk, but because they have contractual terms that are not identical to exchange-traded futures instruments with a comparable market price, these financial instruments are categorized in Level 2 of the fair value hierarchy.

- Physical purchase contracts represent the fair value of fixed-price corn purchase contracts. The fair values of these purchase contracts are measured using a market approach based on quoted prices from the commodity exchange or an independent pricing service and are categorized in Level 2 of the fair value hierarchy.

- Investments of certain benefit plans consist of investment securities held by trusts for the purpose of satisfying a portion of our obligations under certain U.S. nonqualified benefit plans. The assets categorized in Level 1 of the fair value hierarchy are measured at fair value using a market approach based on quoted prices from national securities exchanges. The assets categorized in Level 3 of the fair value hierarchy represent insurance contracts, the fair value of which is provided by the insurer.

- Foreign currency contracts consist of foreign currency exchange and purchase contracts entered into for our international operations to manage our exposure to exchange rate fluctuations on transactions denominated in currencies other than the local (functional) currencies of those operations. These contracts are valued based on quoted prices from the exchange and are categorized in Level 1 of the fair value hierarchy.

- Environmental credit obligations represent our liability for the purchase of (i) biofuel credits (primarily RINs in the U.S.) needed to satisfy our obligation to blend biofuels into the products we produce and (ii) emission credits under the *California Global Warming Solutions Act* (the California cap-and-trade system, also known as AB 32), Quebec's *Environmental Quality Act* (the Quebec cap-and-trade system), and Ontario's *Climate Change Mitigation and Low-Carbon Economy Act* (the Ontario cap-and-trade system), (collectively, the cap-and-trade systems). To the degree we are unable to blend biofuels (such as ethanol and biodiesel) at percentages required under the biofuel programs, we must purchase biofuel credits to comply with these programs. Under the cap-and-trade systems, we must purchase emission credits to comply with these systems. These programs are further described in Note 19 under "Environmental Compliance Program Price Risk." The liability for environmental credits is based on our deficit for such credits as of the balance sheet date, if any, after considering any credits acquired or under contract, and is equal to the product of the credits deficit and the market price of these credits as of the balance sheet date. The environmental credit obligations are categorized in Level 2 of the fair value hierarchy and are measured at fair value using the market approach based on quoted prices from an independent pricing service.

There were no transfers between levels for assets and liabilities held as of December 31, 2017 and 2016 that were measured at fair value on a recurring basis.

There was no significant activity during the years ended December 31, 2017, 2016, and 2015 related to the fair value amounts categorized in Level 3 as of December 31, 2017, 2016, and 2015.

Nonrecurring Fair Value Measurements
As discussed in Note 2, we concluded that the Aruba Terminal was impaired as of June 30, 2016, which resulted in an asset impairment loss of $56 million that was recorded in June 2016. The fair value of the Aruba Terminal was determined using an income approach and was classified in Level 3. We employed a probability-weighted approach to possible future cash flow scenarios, including transferring ownership of the business to the GOA or continuing to operate the business.

There were no assets or liabilities that were measured at fair value on a nonrecurring basis as of December 31, 2017 and 2016.

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Other Financial Instruments
Financial instruments that we recognize in our balance sheets at their carrying amounts are shown in the following table along with their associated fair values (in millions):

	December 31, 2017		December 31, 2016	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Financial assets:				
Cash and temporary cash investments	$ 5,850	$ 5,850	$ 4,816	$ 4,816
Financial liabilities:				
Debt (excluding capital leases)	8,310	9,795	7,926	8,882

The methods and significant assumptions used to estimate the fair value of these financial instruments are as follows:

- The fair value of cash and temporary cash investments approximates the carrying value due to the low level of credit risk of these assets combined with their short maturities and market interest rates (Level 1).

- The fair value of debt is determined primarily using the market approach based on quoted prices provided by third-party brokers and vendor pricing services (Level 2).

19. PRICE RISK MANAGEMENT ACTIVITIES

We are exposed to market risks primarily related to the volatility in the price of commodities, and foreign currency exchange rates, and the price of credits needed to comply with various government and regulatory programs. We enter into derivative instruments to manage some of these risks, including derivative instruments related to the various commodities we purchase or produce, and foreign currency exchange and purchase contracts, as described below under *"Risk Management Activities by Type of Risk."* These derivative instruments are recorded as either assets or liabilities measured at their fair values (see Note 18), as summarized below under *"Fair Values of Derivative Instruments,"* with changes in fair value recognized currently in income. The effect of these derivative instruments on our income is summarized below under *"Effect of Derivative Instruments on Income."*

Risk Management Activities by Type of Risk
Commodity Price Risk
We are exposed to market risks related to the volatility in the price of crude oil, refined petroleum products (primarily gasoline and distillate), grain (primarily corn), soybean oil, and natural gas used in our operations. To reduce the impact of price volatility on our results of operations and cash flows, we use commodity derivative instruments, including futures, swaps, and options. We use the futures markets for the available liquidity, which provides greater flexibility in transacting our hedging and trading operations. We use swaps primarily to manage our price exposure. Our positions in commodity derivative instruments are monitored and managed on a daily basis by our risk control group to ensure compliance with our stated risk management policy that has been approved by our board of directors.

To manage commodity price risk, we use economic hedges, which are not designated as fair value or cash flow hedges, and we use fair value and cash flow hedges from time to time. We also enter into certain commodity derivative instruments for trading purposes. Our objectives for entering into hedges or trading derivatives are described below.

- *Economic Hedges* – Economic hedges represent commodity derivative instruments that are used to manage price volatility in certain (i) feedstock and refined petroleum product inventories, (ii) fixed-price purchase contracts, and (iii) forecasted feedstock, refined petroleum product or natural gas purchases and refined petroleum product sales. The objectives of our economic hedges are to hedge price volatility in certain feedstock and refined petroleum product inventories and to lock in the price of forecasted feedstock, refined petroleum product, or natural gas purchases or refined petroleum product sales at existing market prices that we deem favorable. Economic hedges are not designated as fair value or cash flow hedges for accounting purposes, usually due to the difficulty of establishing the required documentation at the date the derivative instrument is entered into for them to qualify as hedging instruments for accounting purposes.

  As of December 31, 2017, we had the following outstanding commodity derivative instruments that were used as economic hedges, as well as commodity derivative instruments related to the physical purchase of corn at a fixed price. The information presents the notional volume of outstanding contracts by type of instrument and year of maturity (volumes in thousands of barrels, except those identified as corn contracts that are presented in thousands of bushels and soybean oil contracts that are presented in thousands of pounds).

	Notional Contract Volumes by Year of Maturity	
Derivative Instrument	**2018**	**2019**
Crude oil and refined petroleum products:		
Swaps – long	2,655	—
Swaps – short	2,590	—
Futures – long	83,296	—
Futures – short	87,542	—
Corn:		
Futures – long	21,315	35
Futures – short	50,695	665
Physical contracts – long	25,103	630
Soybean oil:		
Futures – long	76,079	—
Futures – short	154,378	—

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

- *Trading Derivatives* – Our objective for entering into commodity derivative instruments for trading purposes is to take advantage of existing market conditions for crude oil and refined petroleum products.

  As of December 31, 2017, we had the following outstanding commodity derivative instruments that were entered into for trading purposes. The information presents the notional volume of outstanding contracts by type of instrument and year of maturity (volumes in thousands of barrels, except those identified as corn contracts that are presented in thousands of bushels).

	Notional Contract Volumes by Year of Maturity	
Derivative Instrument	2018	2019
Crude oil and refined petroleum products:		
Swaps – long	659	—
Swaps – short	659	—
Futures – long	37,532	—
Futures – short	36,919	150
Options – long	153,050	—
Options – short	153,050	—
Corn:		
Futures – long	300	—

We had no commodity derivative contracts outstanding as of December 31, 2017 and 2016 or during the years ended December 31, 2017 and 2016 that were designated as fair value or cash flow hedges.

Foreign Currency Risk
We are exposed to exchange rate fluctuations on transactions entered into by our international operations that are denominated in currencies other than the local (functional) currencies of these operations. To manage our exposure to these exchange rate fluctuations, we use foreign currency exchange and purchase contracts. These contracts are not designated as hedging instruments for accounting purposes and therefore are classified as economic hedges. As of December 31, 2017, we had forward contracts to purchase $507 million of U.S. dollars. These commitments matured on or before January 31, 2018.

Environmental Compliance Program Price Risk
We are exposed to market risk related to the volatility in the price of credits needed to comply with various governmental and regulatory environmental compliance programs. To manage this risk, we enter into contracts to purchase these credits when prices are deemed favorable. Some of these contracts are derivative instruments; however, we elect the normal purchase exception and do not record these contracts at their fair values. Certain of these programs require us to blend biofuels into the products we produce, and we are subject to such programs in most of the countries in which we operate. These countries set annual quotas for the percentage of biofuels that must be blended into the motor fuels consumed in these countries. As a producer of motor fuels from petroleum, we are obligated to blend biofuels into the products we produce at a rate that is at least equal to the applicable quota. To the degree we are unable to blend at the applicable rate, we must purchase biofuel credits (primarily RINs in the U.S.). We are exposed to the volatility in the

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

market price of these credits, and we manage that risk by purchasing biofuel credits when prices are deemed favorable. For the years ended December 31, 2017, 2016, and 2015, the cost of meeting our obligations under these compliance programs was $942 million, $749 million, and $440 million, respectively. These amounts are reflected in cost of materials and other.

We are subject to additional requirements under GHG emission programs, including the cap-and-trade systems, as discussed in Note 18. Under these cap-and-trade systems, we purchase various GHG emission credits available on the open market. Therefore, we are exposed to the volatility in the market price of these credits. The cost to implement certain provisions of the cap-and-trade systems are significant; however, we recovered the majority of these costs from our customers for the years ended December 31, 2017, 2016, and 2015 and expect to continue to recover the majority of these costs in the future. For the years ended December 31, 2017, 2016, and 2015, the net cost of meeting our obligations under these compliance programs was immaterial.

Fair Values of Derivative Instruments
The following tables provide information about the fair values of our derivative instruments as of December 31, 2017 and 2016 (in millions) and the line items in the balance sheets in which the fair values are reflected. See Note 18 for additional information related to the fair values of our derivative instruments.

As indicated in Note 18, we net fair value amounts recognized for multiple similar derivative contracts executed with the same counterparty under master netting arrangements, including cash collateral assets and obligations. The following tables, however, are presented on a gross asset and gross liability basis, which results in the reflection of certain assets in liability accounts and certain liabilities in asset accounts.

		December 31, 2017	
	Balance Sheet Location	Asset Derivatives	Liability Derivatives
Derivatives not designated as hedging instruments			
Commodity contracts:			
Futures	Receivables, net	$ 875	$ 955
Swaps	Receivables, net	11	11
Options	Receivables, net	8	3
Physical purchase contracts	Inventories	—	6
Foreign currency contracts	Accrued expenses	—	7
Total		$ 894	$ 982

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	Balance Sheet Location	December 31, 2016	
		Asset Derivatives	Liability Derivatives
Derivatives not designated as hedging instruments			
Commodity contracts:			
Futures	Receivables, net	$ 874	$ 872
Swaps	Receivables, net	32	21
Options	Receivables, net	6	2
Physical purchase contracts	Inventories	—	5
Foreign currency contracts	Receivables, net	3	—
Total		$ 915	$ 900

Market Risk
Our price risk management activities involve the receipt or payment of fixed price commitments into the future. These transactions give rise to market risk, which is the risk that future changes in market conditions may make an instrument less valuable. We closely monitor and manage our exposure to market risk on a daily basis in accordance with policies approved by our board of directors. Market risks are monitored by our risk control group to ensure compliance with our stated risk management policy. We do not require any collateral or other security to support derivative instruments into which we enter. We also do not have any derivative instruments that require us to maintain a minimum investment-grade credit rating.

Effect of Derivative Instruments on Income
The following tables provide information about the gain or loss recognized in income on our derivative instruments and the income statement line items in which such gains and losses are reflected (in millions).

Derivatives Designated as Economic Hedges	Location of Gain (Loss) Recognized in Income on Derivatives	Year Ended December 31,		
		2017	2016	2015
Commodity contracts	Cost of materials and other	$ (344)	$ (132)	$ 377
Foreign currency contracts	Cost of materials and other	(40)	16	49

Trading Derivatives	Location of Gain Recognized in Income on Derivatives	Year Ended December 31,		
		2017	2016	2015
Commodity contracts	Cost of materials and other	$ 66	$ 46	$ 45

VALERO ENERGY CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

20. QUARTERLY FINANCIAL DATA (Unaudited)

The following table summarizes quarterly financial data for the years ended December 31, 2017 and 2016 (in millions, except per share amounts).

	2017 Quarter Ended			
	March 31	June 30	September 30	December 31 (b)
Operating revenues	$ 21,772	$ 22,254	$ 23,562	$ 26,392
Gross profit (a)	739	1,063	1,624	1,121
Operating income	537	871	1,338	853
Net income	321	572	863	2,400
Net income attributable to Valero Energy Corporation stockholders	305	548	841	2,371
Earnings per common share	0.68	1.23	1.91	5.43
Earnings per common share – assuming dilution	0.68	1.23	1.91	5.42

	2016 Quarter Ended			
	March 31 (c)	June 30 (d)	September 30 (e)	December 31
Operating revenues	$ 15,714	$ 19,584	$ 19,649	$ 20,712
Gross profit (a)	997	1,457	1,096	841
Operating income	829	1,231	892	620
Net income	513	843	645	416
Net income attributable to Valero Energy Corporation stockholders	495	814	613	367
Earnings per common share	1.05	1.74	1.33	0.81
Earnings per common share – assuming dilution	1.05	1.73	1.33	0.81

(a) Gross profit is calculated as operating revenues less total cost of sales.
(b) During the quarter ended December 31, 2017, we recognized an income tax benefit of $1.9 billion related to Tax Reform as described in Note 14.
(c) During the quarter ended March 31, 2016, we recognized a favorable noncash lower of cost or market inventory valuation adjustment of $293 million as described in Note 4.
(d) During the quarter ended June 30, 2016, we recognized a favorable noncash lower of cost or market inventory valuation adjustment of $454 million as described in Note 4 and an asset impairment loss of $56 million related to the Aruba Disposition as described in Note 2.
(e) During the quarter ended September 30, 2016, we recognized a tax benefit of $42 million related to the Aruba Disposition as described in Note 2.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures. Our management has evaluated, with the participation of our principal executive officer and principal financial officer, the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934) as of the end of the period covered by this report, and has concluded that our disclosure controls and procedures were effective as of December 31, 2017.

Internal Control over Financial Reporting.

(a) Management's Report on Internal Control over Financial Reporting.

The management report on Valero's internal control over financial reporting required by Item 9A appears in Item 8 on page 65 of this report, and is incorporated herein by reference.

(b) Attestation Report of the Independent Registered Public Accounting Firm.

KPMG LLP's report on Valero's internal control over financial reporting appears in Item 8 beginning on page 67 of this report, and is incorporated herein by reference.

(c) Changes in Internal Control over Financial Reporting.

There has been no change in our internal control over financial reporting that occurred during our last fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

We continue the implementation process to prepare for the adoption of ASU No. 2016-02, "Leases (Topic 842)," which we discuss more fully in Note 1 of Notes to Consolidated Financial Statements. We expect that there will be changes affecting our internal control over financial reporting in conjunction with adopting this standard. The most significant changes we expect relate to the implementation of a lease evaluation system and a lease accounting system, including the integration of our lease accounting system with our general ledger and modifications to the related procurement and payment processes.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEMS 10-14.

The information required by Items 10 through 14 of Form 10-K is incorporated herein by reference to the definitive proxy statement for our 2018 annual meeting of stockholders. We will file the proxy statement with the SEC on or before March 31, 2018.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) **1. Financial Statements**. The following consolidated financial statements of Valero Energy Corporation and its subsidiaries are included in Part II, Item 8 of this Form 10-K:

2. Financial Statement Schedules and Other Financial Information. No financial statement schedules are submitted because either they are inapplicable or because the required information is included in the consolidated financial statements or notes thereto.

3. Exhibits. Filed as part of this Form 10-K are the following exhibits:

3.01 — Amended and Restated Certificate of Incorporation of Valero Energy Corporation, formerly known as Valero Refining and Marketing Company–incorporated by reference to Exhibit 3.1 to Valero's Registration Statement on Form S-1 (SEC File No. 333-27013) filed May 13, 1997.

3.02 — Certificate of Amendment (July 31, 1997) to Restated Certificate of Incorporation of Valero Energy Corporation–incorporated by reference to Exhibit 3.02 to Valero's Annual Report on Form 10-K for the year ended December 31, 2003 (SEC File No. 1-13175).

3.03 — Certificate of Merger of Ultramar Diamond Shamrock Corporation with and into Valero Energy Corporation dated December 31, 2001–incorporated by reference to Exhibit 3.03 to Valero's Annual Report on Form 10-K for the year ended December 31, 2003 (SEC File No. 1-13175).

3.04 — Amendment (effective December 31, 2001) to Restated Certificate of Incorporation of Valero Energy Corporation–incorporated by reference to Exhibit 3.1 to Valero's Current Report on Form 8-K dated December 31, 2001, and filed January 11, 2002 (SEC File No. 1-13175).

3.05 — Second Certificate of Amendment (effective September 17, 2004) to Restated Certificate of Incorporation of Valero Energy Corporation–incorporated by reference to Exhibit 3.04 to Valero's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004 (SEC File No. 1-13175).

3.06 — Certificate of Merger of Premcor Inc. with and into Valero Energy Corporation effective September 1, 2005–incorporated by reference to Exhibit 2.01 to Valero's Quarterly Report on Form 10-Q for the quarter ended September 30, 2005 (SEC File No. 1-13175).

3.07 — Third Certificate of Amendment (effective December 2, 2005) to Restated Certificate of Incorporation of Valero Energy Corporation–incorporated by reference to Exhibit 3.07 to Valero's Annual Report on Form 10-K for the year ended December 31, 2005 (SEC File No. 1-13175).

3.08 — Fourth Certificate of Amendment (effective May 24, 2011) to Restated Certificate of Incorporation of Valero Energy Corporation–incorporated by reference to Exhibit 4.8 to Valero's Current Report on Form 8-K dated and filed May 24, 2011 (SEC File No. 1-13175).

3.09	—	Fifth Certificate of Amendment (effective May 13, 2016) to Restated Certificate of Incorporation of Valero Energy Corporation–incorporated by reference to Exhibit 3.02 to Valero's Current Report on Form 8-K dated May 12, 2016, and filed May 18, 2016 (SEC File No. 1-13175).
3.10	—	Amended and Restated Bylaws of Valero Energy Corporation–incorporated by reference to Exhibit 3.01 to Valero's Current Report on Form 8-K dated September 20, 2017 and filed September 21, 2017 (SEC File No. 1-13175).
4.01	—	Indenture dated as of December 12, 1997 between Valero Energy Corporation and The Bank of New York–incorporated by reference to Exhibit 3.4 to Valero's Registration Statement on Form S-3 (SEC File No. 333-56599) filed June 11, 1998.
4.02	—	First Supplemental Indenture dated as of June 28, 2000 between Valero Energy Corporation and The Bank of New York (including Form of 7 3/4% Senior Deferrable Note due 2005)–incorporated by reference to Exhibit 4.6 to Valero's Current Report on Form 8-K dated June 28, 2000, and filed June 30, 2000 (SEC File No. 1-13175).
4.03	—	Indenture (Senior Indenture) dated as of June 18, 2004 between Valero Energy Corporation and Bank of New York–incorporated by reference to Exhibit 4.7 to Valero's Registration Statement on Form S-3 (SEC File No. 333-116668) filed June 21, 2004.
4.04	—	Form of Indenture related to subordinated debt securities–incorporated by reference to Exhibit 4.8 to Valero's Registration Statement on Form S-3 (SEC File No. 333-116668) filed June 21, 2004.
4.05	—	Specimen Certificate of Common Stock–incorporated by reference to Exhibit 4.1 to Valero's Registration Statement on Form S-3 (SEC File No. 333-116668) filed June 21, 2004.
*+10.01	—	Valero Energy Corporation Annual Bonus Plan, amended and restated as of February 28, 2018.
+10.02	—	Valero Energy Corporation Annual Incentive Plan for Named Executive Officers–incorporated by reference to Exhibit 10.01 to Valero's Current Report on Form 8-K dated February 22, 2012, and filed February 27, 2012 (SEC File No. 1-13175).
+10.03	—	Valero Energy Corporation 2005 Omnibus Stock Incentive Plan, amended and restated as of October 1, 2005–incorporated by reference to Exhibit 10.02 to Valero's Annual Report on Form 10-K for the year ended December 31, 2009 (SEC File No. 1-13175).
+10.04	—	Valero Energy Corporation 2011 Omnibus Stock Incentive Plan, amended and restated February 25, 2016–incorporated by reference to Exhibit 10.04 to Valero's Annual Report on Form 10-K for the year ended December 31, 2015 (SEC File No. 1-13175).
+10.05	—	Valero Energy Corporation Deferred Compensation Plan, amended and restated as of January 1, 2008–incorporated by reference to Exhibit 10.04 to Valero's Annual Report on Form 10-K for the year ended December 31, 2008 (SEC File No. 1-13175).
+10.06	—	Valero Energy Corporation Amended and Restated Supplemental Executive Retirement Plan, amended and restated as of November 10, 2008–incorporated by reference to Exhibit 10.08 to Valero's Annual Report on Form 10-K for the year ended December 31, 2008 (SEC File No. 1-13175).
+10.07	—	Valero Energy Corporation Excess Pension Plan, as amended and restated effective December 31, 2011–incorporated by reference to Exhibit 10.10 to Valero's Annual Report on Form 10-K for the year ended December 31, 2011 (SEC File No. 1-13175).
+10.08	—	Form of Indemnity Agreement between Valero Energy Corporation (formerly known as Valero Refining and Marketing Company) and certain officers and directors–incorporated by reference to Exhibit 10.8 to Valero's Registration Statement on Form S-1 (SEC File No. 333-27013) filed May 13, 1997.
+10.09	—	Schedule of Indemnity Agreements–incorporated by reference to Exhibit 10.12 to Valero's Annual Report on Form 10-K for the year ended December 31, 2015 (SEC File No. 1-13175).
+10.10	—	Form of Change of Control Severance Agreement (Tier I) between Valero Energy Corporation and executive officer–incorporated by reference to Exhibit 10.15 to Valero's Annual Report on Form 10-K for the year ended December 31, 2011 (SEC File No. 1-13175).
+10.11	—	Schedule of Tier I Change of Control Severance Agreements–incorporated by reference to Exhibit 10.14 to Valero's Annual Report on Form 10-K for the year ended December 31, 2015 (SEC File No. 1-13175).

+10.12	—	Form of Change of Control Severance Agreement (Tier II) between Valero Energy Corporation and executive officer–incorporated by reference to Exhibit 10.16 to Valero's Annual Report on Form 10-K for the year ended December 31, 2013 (SEC File No. 1-13175).
+10.13	—	Schedule of Tier II Change of Control Severance Agreements–incorporated by reference to Exhibit 10.16 to Valero's Annual Report on Form 10-K for the year ended December 31, 2015 (SEC File No. 1-13175).
+10.14	—	Form of Amendment (dated January 7, 2013) to Change of Control Severance Agreements (to eliminate excise tax gross-up benefit)–incorporated by reference to Exhibit 10.17 to Valero's Annual Report on Form 10-K for the year ended December 31, 2012 (SEC File No. 1-13175).
+10.15	—	Form of Change of Control Severance Agreement (Tier II-A) between Valero Energy Corporation and executive officer–incorporated by reference to Exhibit 10.02 to Valero's Current Report on Form 8-K dated November 2, 2016, and filed November 7, 2016 (SEC File No. 1-13175).
+10.16	—	Schedule of Tier II-A Change of Control Severance Agreements–incorporated by reference to Exhibit 10.19 to Valero's Annual Report on Form 10-K for the year ended December 31, 2016 (SEC File No. 1-13175).
+10.17	—	Form of Amendment (dated January 17, 2017) to Change of Control Severance Agreements, amending Section 9 thereof–incorporated by reference to Exhibit 10.01 to Valero's Current Report on Form 8-K dated and filed January 17, 2017 (SEC File No. 1-13175).
*+10.18	—	Form of Performance Share Award Agreement pursuant to the Valero Energy Corporation 2011 Omnibus Stock Incentive Plan.
+10.19	—	Form of Stock Option Agreement pursuant to the Valero Energy Corporation 2011 Omnibus Stock Incentive Plan–incorporated by reference to Exhibit 10.21 to Valero's Annual Report on Form 10-K for the year ended December 31, 2011 (SEC File No. 1-13175).
+10.20	—	Form of Performance Stock Option Agreement pursuant to the Valero Energy Corporation 2011 Omnibus Stock Incentive Plan–incorporated by reference to Exhibit 10.21 to Valero's Annual Report on Form 10-K for the year ended December 31, 2012 (SEC File No. 1-13175).
+10.21	—	Form of Restricted Stock Agreement pursuant to the Valero Energy Corporation 2011 Omnibus Stock Incentive Plan–incorporated by reference to Exhibit 10.25 to Valero's Annual Report on Form 10-K for the year ended December 31, 2012 (SEC File No. 1-13175).
10.22	—	$3,000,000,000 5-Year Third Amended and Restated Revolving Credit Agreement, dated as of November 12, 2015, among Valero Energy Corporation, as Borrower; JPMorgan Chase Bank, N.A., as Administrative Agent; and the lenders named therein–incorporated by reference to Exhibit 10.1 to Valero's Current Report on Form 8-K dated November 12, 2015, and filed November 13, 2015 (SEC File No. 1-13175).
*12.01	—	Statements of Computations of Ratios of Earnings to Fixed Charges.
14.01	—	Code of Ethics for Senior Financial Officers–incorporated by reference to Exhibit 14.01 to Valero's Annual Report on Form 10-K for the year ended December 31, 2003 (SEC File No. 1-13175).
*21.01	—	Valero Energy Corporation subsidiaries.
*23.01	—	Consent of KPMG LLP dated February 28, 2018.
*24.01	—	Power of Attorney dated February 28, 2018 (on the signature page of this Form 10-K).
*31.01	—	Rule 13a-14(a) Certification (under Section 302 of the Sarbanes-Oxley Act of 2002) of principal executive officer.
*31.02	—	Rule 13a-14(a) Certification (under Section 302 of the Sarbanes-Oxley Act of 2002) of principal financial officer.
**32.01	—	Section 1350 Certifications (under Section 906 of the Sarbanes-Oxley Act of 2002).
*99.01	—	Audit Committee Pre-Approval Policy.
***101	—	Interactive Data Files

* Filed herewith.

** Furnished herewith.

*** Submitted electronically herewith.

\+ Identifies management contracts or compensatory plans or arrangements required to be filed as an exhibit hereto.

Pursuant to paragraph 601(b)(4)(iii)(A) of Regulation S-K, the registrant has omitted from the foregoing listing of exhibits, and hereby agrees to furnish to the SEC upon its request, copies of certain instruments, each relating to debt not exceeding 10 percent of the total assets of the registrant and its subsidiaries on a consolidated basis.

SIGNATURE

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.

VALERO ENERGY CORPORATION
(Registrant)

By: /s/ Joseph W. Gorder

(Joseph W. Gorder)
Chairman of the Board, President,
and Chief Executive Officer

Date: February 28, 2018

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Joseph W. Gorder, Michael S. Ciskowski, and Jay D. Browning, or any of them, each with power to act without the other, his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any or all subsequent amendments and supplements to this Annual Report on Form 10-K, and to file the same, or cause to be filed the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby qualifying and confirming all that said attorney-in-fact and agent or his substitute or substitutes may lawfully do or cause to be done by virtue hereof.

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 on the dates indicated.

Signature	Title	Date
/s/ Joseph W. Gorder (Joseph W. Gorder)	Chairman of the Board, President, and Chief Executive Officer (Principal Executive Officer)	February 28, 2018
/s/ Michael S. Ciskowski (Michael S. Ciskowski)	Executive Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	February 28, 2018
/s/ H. Paulett Eberhart (H. Paulett Eberhart)	Director	February 28, 2018
/s/ Kimberly S. Greene (Kimberly S. Greene)	Director	February 28, 2018
/s/ Deborah P. Majoras (Deborah P. Majoras)	Director	February 28, 2018
/s/ Donald L. Nickles (Donald L. Nickles)	Director	February 28, 2018
/s/ Philip J. Pfeiffer (Philip J. Pfeiffer)	Director	February 28, 2018
/s/ Robert A. Profusek (Robert A. Profusek)	Director	February 28, 2018
/s/ Susan Kaufman Purcell (Susan Kaufman Purcell)	Director	February 28, 2018
/s/ Stephen M. Waters (Stephen M. Waters)	Director	February 28, 2018
/s/ Randall J. Weisenburger (Randall J. Weisenburger)	Director	February 28, 2018
/s/ Rayford Wilkins, Jr. (Rayford Wilkins, Jr.)	Director	February 28, 2018

Exhibit 10.01

Valero Energy Corporation
Annual Bonus Plan

(Amended and Restated through February 28, 2018)

Table of Contents

INTRODUCTION

The Valero Energy Corporation Annual Bonus Plan (the "Plan") has been established for the purpose of providing bonus compensation to eligible employees employed by Affiliates of Valero Energy Corporation (hereinafter collectively referred to as the "Company"). Any bonus compensation is contingent upon the Company's overall fiscal performance as well as the Participant's adherence to Company standards and policies. The Compensation Committee of the Board has the discretion to authorize (or not authorize) any bonus payment under this Plan. The Company intends and desires to incentivize employees to comply with Company standards and policies in order to foster continued Company profitability.

Article 1 – Definitions

For purposes of the Plan, unless the context requires otherwise, the following terms have the meanings set forth below.

1.1 "Affiliate" means (a) any entity that, directly or indirectly through one or more intermediaries, is controlled by the Company and (b) any entity in which the Company has a significant equity interest, in each case determined by the Committee.

1.2 "Board" means the Board of Directors of the Company.

1.3 "Bonus Target" means a percentage established to represent a target bonus percentage determined through competitive survey analysis reflecting the Company's stated compensation philosophy and based on each position's relative importance to the overall financial success of the Company.

1.4 "Committee" means the Compensation Committee of the Board.

1.5 "Company" means Valero Energy Corporation and its Affiliates.

1.6 "Discretionary Adjustment " means the unrestricted authority of the Committee:

(i) to determine whether to award or not to award a bonus to individuals, and to determine the amount of any award; and

(ii) to adjust or award the bonus amounts payable to subgroups of Participants in greater or lesser percentages than amounts to be paid to other Participants;

with all such discretion to be based upon such factors as the Committee deems appropriate.

1.7 "Employee" means an employee of the Company.

1.8 "Fair Market Value" means, with respect to any property (including, without limitation, any shares, units or other securities), the fair market value of such property determined by such methods or procedures as shall be established from time to time by the Committee. Unless otherwise determined by the Committee, the Fair Market Value of a share of Valero common stock on a given date for purposes of the Plan shall be the mean of the high and low sales price per share of Valero common stock as reported on the New York Stock Exchange on such date or, if such Exchange is not open for trading on such date, on the next following date when such Exchange is open for trading.

1.9 "Participant" means an Employee who is selected by the Committee to participate in the Plan.

1.10 "Peer Group" means those companies in the petroleum and energy services industry sector designated by the Committee as comparator companies which may be benchmarked for determining the Company's performance as measured by selected Performance Criteria.

1.11 "Performance Criteria" means those performance measures approved by the Compensation Committee that determine the level of Bonus Target to be earned, subject to any Discretionary Adjustment.

1.12 "Plan Year" means the Company's fiscal year.

1.13 "Plan" means the Valero Energy Corporation Annual Bonus Plan.

Article 2 – <u>Administration</u>

2.1 The Plan shall be administered by the Committee. The Committee shall consist of at least three "Non-Employee Directors" (as defined in Rule 16b-3 under the Securities Exchange Act of 1934, as amended from time to time). If the Committee fails to meet the foregoing criteria, then additional non-employee persons shall be appointed by the Board for purposes of administering this Plan so that the committee administering this Plan shall be composed solely of three or more Non-Employee Directors.

2.2 The Committee is empowered to:

(a) Review and approve all determinations relating to the eligibility of Participants;

(b) Make rules and regulations for the administration of the Plan that are not inconsistent with the terms and provisions hereof;

(c) Construe all terms, provisions, conditions, and limitations of the Plan in good faith;

(d) Review and approve (i) determinations on whether to grant any award and (ii) any computations concerning the amounts to which any Participant or his or her beneficiary may receive under the Plan;

(e) Select, employ, and compensate from time to time consultants, accountants, attorneys and other agents as the Committee may deem necessary or advisable for the proper and efficient administration of the Plan.

2.3 The foregoing list of express powers is not intended to be either complete or exclusive, but the Committee shall, in addition, have such powers, whether or not expressly authorized, that it may deem necessary, desirable, advisable, or proper for the supervision and administration of the Plan. Except as otherwise specifically provided herein, the decision or judgment of the Committee on any question arising hereunder in connection with the exercise of any of its powers shall be final, binding, and conclusive upon all parties concerned.

2.4 The Committee shall have the responsibility of authorizing payment to each eligible Participant and directing that such payment be disbursed by the Company.

2.5 The Board or the Committee may, at any time (including during the course of a Plan Year), amend or terminate the Plan. Such amendments or terminations may be made without the consent of the Participants.

2.6 For the avoidance of doubt, the Committee is empowered, in its sole discretion, to substantially reduce or eliminate altogether a bonus for a Participant in any Plan Year, based upon the Company's or the Committee's view of the Participant's disciplinary status, job performance, or any other factor.

Article 3 – <u>Participation</u>

3.1 The designation of Employees of the Company as Participants under the Plan shall be approved by the Committee, and no Employee of the Company will have the right to require the Committee to make him or her a Participant or to allow him or her to remain a Participant under the Plan. The designation of an Employee as a Participant in the Plan does not guarantee the payment of any bonus award under the Plan.

Article 4 – <u>Determination of Bonus Awards</u>

4.1 During the course of the Plan Year, the Committee shall review and approve those Performance Criteria which the Committee believes will measure the Company's financial, stockholder, and/or operational performance for the applicable Plan Year. The Performance Criteria will be developed by Company management and submitted to the Committee for review and discussion. The Committee may request Company management to provide threshold, target, and maximum levels of performance for each Performance Criteria considered.

4.2 The Company's performance may be evaluated on an absolute basis by determining the Company's achievement versus a budgeted or pre-established level of performance approved by the Committee. Likewise, the Company's performance may be evaluated by the Committee's evaluation of the Company's performance or by comparing the Company's performance against a Peer Group's performance achievement for the same Performance Criteria. The measurement process for purposes of the plan may include both quantitative and qualitative assessments by the Committee.

4.3 When the Performance Criteria are established and approved during the course of the Plan Year, the Committee may elect to weight each of the Performance Criteria based upon the strategic importance of the respective Performance Criteria in consideration of the Company's annual business plan. The weightings of the Performance Criteria may change from one Plan Year to the next.

4.4 In determining the Company's performance during a measurement period, Performance Criteria will be utilized. These Performance Criteria may be modified, deleted, or added to from one Plan Year to the next as determined by the Committee in its judgment and discretion. Further, these performance criteria may be established in either quantitative or qualitative format for purposes of measurement.

4.5 Following the close of the Plan Year, the Committee will evaluate the Company's performance compared to the Performance Criteria. The results of this evaluation will serve as the basis for the determination of the amount of Bonus Target achieved, which may range from 0 percent to as much as 200 percent of Participants' Bonus Targets. The Committee may then consider an addition to or subtraction from the bonus by applying a Discretionary Adjustment as the Committee may determine.

4.6 The Committee will normally authorize the payment of bonus awards within two and one-half months (75 days) after the close of the Plan Year. However, the Committee reserves the right to accelerate the determination and payment of bonus awards prior to the completion of the Plan Year based on the estimated or expected performance of the Company for such Plan Year.

Article 5 – <u>Bonus Targets</u>

5.1 Bonus Targets for each position are established based upon competitive survey data consistent with the Company's stated executive compensation philosophy and the position's deemed relative importance to the overall financial success of the Company. The Committee shall review and approve a Bonus Target for each officer.

5.2 Each bonus award shall be calculated by using the established Bonus Target for Participants in the Plan, adjusted by the results of the Performance Criteria and any Discretionary Adjustment. An evaluation of a Participant's individual performance may also be used to adjust a Participant's bonus award.

5.3 The fact that a Bonus Target is established for any position does not guarantee any payment of a bonus award under this Plan to any Participant.

Article 6 – <u>Form of Payment; Recapture by the Company ("Clawback")</u>

6.1 Bonuses payable under the Plan shall be paid in the form of cash in whole or in part or, if permitted under applicable NYSE and SEC rules and regulations, in the form of common stock of the Company in whole or in part.

6.2 With respect to Plan bonuses payable in part or in whole in shares of common stock of the Company, a Participant may pay all or part of the amount of any taxes required to be collected or withheld by the Company upon payment of the Participant's bonus by electing, before an established date prior to the time of payment of the bonus, to have the Company withhold from the number of common shares otherwise deliverable under the bonus a number of common shares having a Fair Market Value on the established date not exceeding the amount of the tax payment. For this purpose, federal income tax may be withheld at the highest personal tax rate then in effect.

6.3 The Committee may approve a deferral of the payment of bonuses with payment in whole at a later date or in installments over a period of time. The length of time of deferral or installment period will be determined at the discretion of the Committee in accordance with applicable laws and regulations. Such deferrals will be credited to the individual participant's nonqualified deferred compensation account.

6.4 Payments made under the Plan remain subject to recapture by the Company under the terms and conditions of the Company's *Policy on Executive Compensation in Restatement Situations* ("Policy"), as the Policy may be in effect from time to time.

Article 7 – <u>Miscellaneous Terms and Provisions</u>

7.1 No Employee shall have any claim or right to be paid a bonus in any amount or in any form of award, and any award of a bonus will not be construed as giving a Participant the right to be retained in the employ of the Company. Similarly, regardless of the circumstances under which a Participant resigns or terminates his or her employment or is involuntarily terminated, he or she has no claim or right to a bonus, in whole or in part. Further, the Company expressly reserves the right at any time to terminate the employment of any Employee or Participant free from any liability under the Plan.

7.2 The validity, construction, and effect of the Plan and any actions taken or relating to the Plan shall be determined in accordance with the laws of the State of Texas and applicable Federal law.

7.3 The Company will require any successor (whether direct or indirect, by purchase, merger, consolidation, or otherwise) to all or substantially all of the business and/or assets of the Company, expressly to assume and agree to perform the Company's obligations under this Plan in the same manner and to the same extent that the Company would be required to perform them if no such succession had taken place. As used herein, the "Company" shall mean the Company as hereinbefore defined and any aforesaid successor to its business and/or assets.

7.4 No member of the Board or the Committee, nor any officer or Employee of the Company acting on behalf of the Board or the Committee, shall be personally liable for any action, determination, or interpretation taken or made in good faith with respect to the Plan, and all members of the Board or the Committee and each and any officer or Employee of the Company acting on their behalf shall, to the extent permitted by law, be fully indemnified and protected by the Company in respect of any such action, determination, or interpretation.

7.5 Notwithstanding anything in this Plan to the contrary, if any Plan provision or bonus award under the Plan would result in the imposition of an applicable tax under Section 409A of the Internal Revenue Code of 1986, as amended, and related regulations and Treasury pronouncements ("Section 409A"), that Plan provision or bonus award may be reformed to avoid imposition of the applicable tax and no action taken to comply with Section 409A shall be deemed to adversely affect the Participant's rights to an award.

Exhibit 10.18

PERFORMANCE SHARE AGREEMENT

This Performance Share Agreement (the "Agreement") is entered into as of **_____, 20__**, by and between **Valero Energy Corporation**, a Delaware corporation ("Valero"), and __________, a participant (the "Participant") in Valero's **2011 Omnibus Stock Incentive Plan** (as may be amended, the "Plan"), pursuant to and subject to the provisions of the Plan.

1. **Grant of Performance Shares**. Valero hereby grants to Participant **_______** Performance Shares pursuant to Section 6.7 of the Plan. The Performance Shares represent rights to receive shares of Common Stock of Valero, subject to the terms and conditions of this Agreement and the Plan.

2. **Vesting and Delivery of Shares**.

A. **Vesting**. The Performance Shares granted hereunder shall vest over a period of three years in equal, one-third increments with the first increment vesting on the date of the regularly scheduled meeting of the Board's Compensation Committee in January 2019, and the second and third increments vesting on the Committee's meeting dates in January 2020 and January 2021, respectively (each of these vesting dates is referred to as a "Normal Vesting Date"); any award(s) of shares of Common Stock resulting in connection with such vesting shall be subject to verification of attainment of the Performance Objectives described in Section 4 below by the Compensation Committee. If the Committee is unable to meet in January of a given year, then the Normal Vesting Date for that year will be the date not later than March 31 of that year as selected by the Compensation Committee.

B. **Rights.** Until shares of Common Stock are actually issued to Participant (or his or her estate) in settlement of the Performance Shares, neither Participant nor any person claiming by, through or under Participant shall have any rights as a stockholder of Valero (including, without limitation, voting rights or any right to receive dividends or other distributions) with respect to such shares.

C. **Distribution**. Any shares of Common Stock to be distributed under the terms of this Agreement shall be distributed as soon as administratively practicable after Performance Objectives described in Section 4 below have been verified by the Compensation Committee, but not later than two-and-one-half months following the end of the year in which such verification occurred.

3. **Performance Period**. Except as provided below with respect to a Change of Control (as defined in the Plan), the "Performance Period" for any Performance Shares eligible to vest on any Normal Vesting Date shall be as follows:

A. **First Segment**. The Performance Period for the first one-third vesting of Performance Shares (those vesting on the Normal Vesting Date in January 2019) shall be the calendar year ending on December 31, 2018.

B. **Second Segment**. The Performance Period for the second one-third vesting of Performance Shares (those vesting on the Normal Vesting Date in January 2020) shall be the two calendar years ending December 31, 2019.

C. **Third Segment**. The Performance Period for the final one-third vesting of Performance Shares (those vesting on the Normal Vesting Date in January 2021) shall be the three calendar years ending December 31, 2020.

4. **Performance Objectives**.

A. **Total Shareholder Return**. Total Shareholder Return ("TSR") will be compiled for a peer group of companies (the "Target Group") for the Performance Period immediately preceding each Normal Vesting Date. TSR for each such company is measured by dividing (A) the sum of (i) the dividends on the common stock of such company during the Performance Period, assuming dividend reinvestment, and (ii) the difference between the average closing price of a share of such company's common stock for the 30 days of December 2 to December 31 at the end of the Performance Period and the average closing price of such shares for the 30 days of December 2 to December 31 immediately prior to the beginning of the Performance Period (appropriately adjusted for any stock dividend, stock split, spin-off, merger or other similar corporate events), by (B) the average closing price of a share of such company's common stock for the 30 days of December 2 to December 31 immediately prior to the beginning of the Performance Period.

B. **Target Group**. The applicable Target Group shall be selected by the Compensation Committee, acting in its sole discretion, each year not later than 90 days after the commencement of the calendar year preceding each Normal Vesting Date. The same Target Group shall be used to measure TSR with regard to all Performance Shares vesting under all Performance Award Agreements of Valero having a similar Normal Vesting Date.

C. **Performance Ranking and Award of Common Shares**. For each Performance Period, the TSR for Valero and each company in the Target Group shall be arranged by rank from highest performer to lowest performer according to the TSR achieved by each company. Shares of Common Stock will be awarded to Participant in accordance with Valero's percentile ranking within the Target Group. The number of shares of Common Stock, if any, that Participant will be entitled to receive in settlement of the vested Performance Shares will be determined on each Normal Vesting Date and, subject to the provisions of the Plan and this Agreement, on such Normal Vesting Date, the following percentage of the vested Performance Shares will be awarded as shares of Common Stock to the Participant when Valero's TSR during the Performance Period falls within the following percentiles ("Percentiles"):

Ranking	Percentile	Payout
1	100.0%	200.0%
2	88.9%	200.0%
3	77.8%	171.4%
4	66.7%	142.9%
5	55.6%	114.3%
6	44.4%	85.7%
7	33.3%	57.1%
8	22.2%	28.6%
9	11.1%	0.0%
10	0.0%	0.0%

D. **Unearned Shares**. Any Performance Shares not awarded as shares of Common Stock on a Normal Vesting Date will expire and be forfeited; such Performance Shares may not be carried forward for any additional Performance Period.

5. **Dividend Equivalent Award**. In addition to the Performance Shares granted in Section 1, the Participant is granted a Dividend Equivalent Award payable in shares of Common Stock, as provided herein. On each Normal Vesting Date, the amount of dividends paid to holders of Common Stock during the applicable Performance Period shall be determined with respect to the Participant's Performance Shares that are vesting on that Normal Vesting Date—calculated as if the Performance Shares were outstanding shares of Common Stock (the resulting value being hereafter referred to as the "Target Dividend Equivalent Value"). The Target Dividend Equivalent Value shall then be subject to further calculation according to Valero's TSR ranking during the Performance Period as prescribed in Section 4.C. above (*i.e*., payout from 0% to 200% depending on Valero's TSR ranking). The number of shares of Common Stock payable to Participant with respect to the Dividend Equivalent Award is equal to (x) the Target Dividend Equivalent Value multiplied by the Performance Period's payout percentage calculated per Section 4.C., divided by (y) the Fair Market Value of the Common Stock on the Normal Vesting Date (the resulting number being rounded up to the nearest whole number of shares). See Exhibit A for an example of this calculation.

6. **Termination of Employment**.

A. **Voluntary Termination, Termination for "Cause," and Early Retirement**. If Participant's employment is

(i) voluntarily terminated by the Participant (other than through normal retirement, death or disability), including termination in connection with Participant's voluntary early retirement (*i.e*., prior to age 62),

(ii) terminated by Valero for "cause" (as defined pursuant to the Plan),

then those Performance Shares that are outstanding and have not vested as of the effective date of termination shall thereupon be forfeited.

B. **Retirement**. If a Participant's employment is terminated through his or her normal retirement (*i.e*., age 62+ retirement), then any Performance Shares that (i) have not theretofore vested or been forfeited, and (ii) were granted at least one year prior to the Participant's effective date of retirement, shall continue to remain outstanding and shall vest on the Normal Vesting Dates according to their original vesting schedule.

But any outstanding Performance Shares that were granted within one year of the Participant's effective date of retirement shall be prorated as follows. The outstanding Performance Shares shall be prorated based on the number of months worked from the date of grant to the Participant's retirement date (rounding upward), and the prorated number of Performance Shares shall thereafter vest on the Normal Vesting Dates according to their original vesting schedule. *Example*:

- 25,530 Performance Shares granted on November 1, 2017,
- normal retirement date of Participant is effective April 15, 2018,
- working period is calculated as 6 months (5 full months plus partial month rounding upward to 6 months),
- original grant is adjusted by 6/12ths (50%) resulting in 12,765 Performance Shares to vest according to their original vesting schedule.

C. **Death, Disability, Involuntary Termination Other Than for "Cause," and Change of Control**. If a Participant's employment is terminated (i) through death or disability, or (ii) by Valero other than for cause (as determined pursuant to the Plan), or (iii) as a result of a Change of Control (as described in the Plan) (each of the foregoing is hereafter referred to as a "Trigger Date"), then each Performance Period with respect to any Performance Shares that have not vested or been forfeited shall be terminated effective as of such Trigger Date; the TSR for Valero and for each company in the Target Group shall be determined for each such shortened Performance Period and the percentage of Performance Shares to be awarded as shares of Common Stock for each such shortened Performance Period shall be determined in accordance with Section 4 and shall be distributed as soon as administratively practicable thereafter.

(i) For purposes of determining the number of Performance Shares to be received as of any Trigger Date, the Target Group as most recently determined by the Compensation Committee prior to the Trigger Date shall be used.

(ii) If the Trigger Date is the result of a Change of Control, then the number of shares of Common Stock to be awarded to the Participant shall be prorated commensurate with the length of service of the Participant during each Performance Period. See Exhibit B for an example of this calculation.

7. **Cash Payment Election**. Effective on any Normal Vesting Date (or Trigger Date under Section 6.C), the Participant (or the Participant's estate under Section 6.C) may elect to receive up to 50% of the after-tax value of the aggregate number of shares of Common Stock earned on such Normal Vesting Date (or Trigger Date) in cash, with the remainder paid in shares of Common Stock. *Example*:

- following the calculation of Valero's performance against the Target Group for the two-year performance period ending December 31, 2019, it is determined that the Participant is entitled to receive 4,000 shares of Common Stock on the Normal Vesting Date occurring in January 2020 (the "2020 Normal Vesting Date"),
- the 4,000 shares have an aggregate tax value of $300,000 (4,000 shares times an assumed $75 FMV per share on the 2020 Normal Vesting Date), and the Participant has made a tax withholding election of 39.6%,
- the after-tax value of the 4,000 shares of Common Stock awarded on the Normal Vesting Date is $181,200 ($300,000 times 60.4%),
- the Participant may elect to receive up to $90,600 ($181,200 times 50%) in cash on the 2020 Normal Vesting Date.

8. **Plan Incorporated by Reference**. The Plan is incorporated into this Agreement by this reference and is made a part hereof for all purposes. Capitalized terms not otherwise defined in this Agreement shall have the meaning specified in the Plan.

9. **No Assignment**. This Agreement and the Participant's interest in the Performance Shares granted by this Agreement are of a personal nature, and, except as expressly permitted under the Plan, Participant's rights with respect thereto may not be sold, mortgaged, pledged, assigned, transferred, conveyed or disposed of in any manner by Participant, except by an executor or beneficiary pursuant to a will or pursuant to the laws of descent and distribution. Any such attempted sale, mortgage, pledge, assignment, transfer, conveyance or disposition is void, and Valero will not be bound thereby.

10. **Integration**. This Agreement constitutes the entire agreement of the parties relating to the transactions contemplated hereby, and supersedes all provisions and concepts contained in all prior contracts or agreements between the Participant and Valero, including that certain Change of Control Severance Agreement ("COC Agreement") between Participant and Valero. For avoidance of doubt, Participant acknowledges that in the context of a Change of Control of Valero, the terms of this Agreement shall prevail over the terms of the COC Agreement with respect to the vesting of the Performance Shares granted under this Agreement.

11. **Successors**. This Agreement shall be binding upon any successors of Valero and upon the beneficiaries, legatees, heirs, administrators, executors, legal representatives, successors and permitted assigns of Participant.

12. **Code Section 409A**. This Agreement is intended to comply, and shall be administered consistently in all respects, with Section 409A of the Internal Revenue Code of 1986, as amended (the "Code"), and the regulations and additional guidance promulgated thereunder to the extent applicable. Accordingly, Valero shall have the authority to take any action, or refrain from taking any action, with respect to this Agreement that is reasonably necessary to ensure compliance with Code Section 409A (provided that Valero shall choose the action that best preserves the value of payments and benefits provided to Participant under this Agreement that is consistent with Code Section 409A), and the parties agree that this Agreement shall be interpreted in a manner that is consistent with Code Section 409A. In furtherance, but not in limitation of the foregoing:

(a) in no event may Participant designate, directly or indirectly, the calendar year of any payment to be made hereunder;

(b) to the extent the Participant is a "specified employee" within the meaning of Code Section 409A, payments, if any, that constitute a "deferral of compensation" under Code Section 409A and that would otherwise become due during the first six months following Participant's termination of employment shall be delayed and all such delayed payments shall be paid in full in the seventh month after such termination date, *provided that* the above delay shall not apply to any payment that is excepted from coverage by Code Section 409A, such as a payment covered by the short-term deferral exception described in Treasury Regulations Section 1.409A-1(b)(4);

(c) notwithstanding any other provision of this Agreement, a termination, resignation or retirement of Participant's employment hereunder shall mean and be interpreted consistent with a "separation from service" within the meaning of Code Section 409A;

(d) terms defined in this section will have the meanings given such terms under Section 409A if and to the extent required to comply with Section 409A. Notwithstanding any other provision hereof, Valero makes no representations or warranties and will have no liability to Participant or any other person if any provision of or payment under this Agreement is determined to constitute deferred compensation subject to Section 409A but does not satisfy the conditions of Section 409A.

Executed effective as of the date first written above.

VALERO ENERGY CORPORATION

by: ____________________________________
Julia Rendon Reinhart,
Vice President-Human Resources

____
[name of Participant]

Exhibit A

Example of Potential Payout of Dividend Equivalent Award in Shares of Common Stock
(per Section 5 of the Agreement)

Assumptions and Calculations (for illustration purposes only):

1. Assume the Participant was granted 12,000 Performance Shares on November 1, 2017.

2. Assume the Normal Vesting Date for the second segment of these Performance Shares is January 22, 2020. On that date 4,000 Performance Shares (12,000 / 3 = 4,000) vest with respect to the two-year Performance Period ending December 31, 2019.

3. Assume the cumulative amount of dividends paid to holders of Common Stock during the Performance Period is $5.80 per share (determined as follows).

dividends paid in 1Q18	$0.70
2Q18	$0.70
3Q18	$0.70
4Q18	$0.70
1Q19	$0.75
2Q19	$0.75
3Q19	$0.75
4Q19	$0.75
	$5.80 per share

4. The "Target Dividend Equivalent Value" is $23,200.00 (4,000 Performance Shares vesting, multiplied by $5.80 accumulated dividends per share, equals $23,200.00).

5. Valero's TSR ranking for the Performance Period is determined (per Section 4.C.) to generate a payout of 142.9%.

6. The Fair Market Value of the Common Stock on the vesting date is $72.00.

7. Based on the foregoing, the total number of shares of Common Stock earned by the Participant on the vesting date is 6,177. The calculation is illustrated below.

Section 4.C.	4,000	Performance Shares vesting
	x 142.9%	multiply by TSR ranking payout percentage
	5,716	
Section 5.	$23,200.00	Target Dividend Equivalent Value
	x 142.9%	multiply by TSR ranking payout percentage
	$33,152.80	dividend equivalent based on segment performance
	/ $72.00	divided by FMV per share
	461	common shares earned for Dividend Equivalent Award (rounded up)
	6,177	total common shares earned on vesting date

Exhibit B

Example of Potential Payout in a Change of Control Context
(per Section 6.C.(ii) of the Agreement)

Assumptions and Calculations (for illustration purposes only):

1. Assume the Participant was granted 15,000 Performance Shares on November 1, 2017.

2. Assume Participant's employment is terminated on June 30, 2018 as a result of a Change of Control.

3. Per Section 6.C. of the Agreement, all Performance Periods for all segments (First Segment, Second Segment, Third Segment (See Section 3)) are shortened to end on June 30, 2018.

4. As a result of the TSR calculations of Section 4.C., Valero is ranked in the 88.9 percentile for each shortened Performance Period, resulting in a 200% payout of common shares in each instance.

5. Payout of common shares to the Participant is prorated based on the Participant's length of service during the original Performance Periods.

First Segment calculation.
15,000 / 3 = 5,000 performance shares.
6 months of service in the 12-month Performance Period.

5,000 perf. shares	
x 200% payout	
10,000 common shares x 6 / 12 =	5,000 common shares

Second Segment calculation.
15,000 / 3 = 5,000 performance shares.
6 months of service in the 24-month Performance Period.

5,000 perf. shares	
x 200% payout	
10,000 common shares x 6 / 24 =	2,500 common shares

Third Segment calculation.
15,000 / 3 = 5,000 performance shares.
6 months of service in the 36-month Performance Period.

5,000 perf. shares	
x 200% payout	
10,000 common shares x 6 / 36 =	1,667 common shares
Total payout	9,167 common shares

Exhibit 12.01

VALERO ENERGY CORPORATION
STATEMENTS OF COMPUTATION OF RATIO OF EARNINGS TO FIXED CHARGES
(Millions of Dollars)

	Year Ended December 31,				
	2017	**2016**	**2015**	**2014**	**2013**
Earnings:					
Income from continuing operations before income tax expense, excluding income from equity investees	$ 3,198	$ 3,173	$ 5,962	$ 5,538	$ 3,951
Add:					
Fixed charges	776	781	783	687	695
Amortization of capitalized interest	43	40	37	35	31
Distributions from equity investees	6	6	26	6	3
Less:					
Interest capitalized	(71)	(65)	(71)	(70)	(118)
Total earnings	$ 3,952	$ 3,935	$ 6,737	$ 6,196	$ 4,562
Fixed charges:					
Interest and debt expense, net of capitalized interest	$ 468	$ 446	$ 433	$ 397	$ 365
Interest capitalized	71	65	71	70	118
Rental expense interest factor (a)	237	270	279	220	212
Total fixed charges	$ 776	$ 781	$ 783	$ 687	$ 695
Ratio of earnings to fixed charges	5.1 x	5.0 x	8.6 x	9.0 x	6.6 x

____
(a) The interest portion of rental expense represents one-third of rents, which is deemed representative of the interest portion of rental expense.

Exhibit 21.01

Subsidiaries of Valero Energy Corporation
as of February 14, 2018

Name of Entity	State of Incorporation/Organization
CANADIAN ULTRAMAR COMPANY	Nova Scotia
COLONNADE TEXAS INSURANCE COMPANY, LLC	Texas
COLONNADE VERMONT INSURANCE COMPANY	Vermont
DIAMOND ALTERNATIVE ENERGY, LLC	Delaware
DIAMOND ALTERNATIVE ENERGY OF CANADA INC.	Canada
DIAMOND GREEN DIESEL HOLDINGS LLC	Delaware
DIAMOND GREEN DIESEL LLC	Delaware
DIAMOND K RANCH LLC	Texas
DIAMOND OMEGA COMPANY, L.L.C.	Delaware
DIAMOND SHAMROCK REFINING COMPANY, L.P.	Delaware
DIAMOND UNIT INVESTMENTS, L.L.C.	Delaware
DSRM NATIONAL BANK	U.S.A.
ENTERPRISE CLAIMS MANAGEMENT, INC.	Texas
GOLDEN EAGLE ASSURANCE LIMITED	British Columbia
HAMMOND MAINLINE PIPELINE LLC	Delaware
HUNTWAY REFINING COMPANY	Delaware
MAINLINE PIPELINES LIMITED	England and Wales
MICHIGAN REDEVELOPMENT GP, LLC	Delaware
MICHIGAN REDEVELOPMENT, L.P.	Delaware
MRP PROPERTIES COMPANY, LLC	Michigan
NECHES RIVER HOLDING CORP.	Delaware
NORCO METHANOL, LLC	Delaware
OCEANIC TANKERS AGENCY LIMITED	Quebec
PARKWAY PIPELINE LLC	Delaware
PICKARD PLACE CONDOMINIUM ASSOCIATION	Michigan
PI DOCK FACILITIES LLC	Delaware
PORT ARTHUR COKER COMPANY L.P.	Delaware
PREMCOR USA INC.	Delaware
PROPERTY RESTORATION, L.P.	Delaware
SABINE RIVER HOLDING CORP.	Delaware
SABINE RIVER LLC	Delaware
SAINT BERNARD PROPERTIES COMPANY LLC	Delaware
SUNBELT REFINING COMPANY, L.P.	Delaware
THE PREMCOR PIPELINE CO.	Delaware
THE PREMCOR REFINING GROUP INC.	Delaware
THE SHAMROCK PIPE LINE CORPORATION	Delaware
TRANSPORT MARITIME ST. LAURENT INC.	Quebec
ULTRAMAR ACCEPTANCE INC.	Canada
ULTRAMAR ENERGY INC.	Delaware

ULTRAMAR INC.	Nevada
V-TEX LOGISTICS LLC	Delaware
VALERO ADMINISTRATIVE SERVICES DE MÉXICO, S.A. DE C.V.	Mexico
VALERO ARUBA ACQUISITION COMPANY I, LTD.	Virgin Islands (U.K.)
VALERO ARUBA FINANCE INTERNATIONAL, LTD.	Virgin Islands (U.K.)
VALERO ARUBA HOLDING COMPANY N.V.	Aruba
VALERO ARUBA HOLDINGS INTERNATIONAL, LTD.	Virgin Islands (U.K.)
VALERO ARUBA MAINTENANCE/OPERATIONS COMPANY N.V.	Aruba
VALERO (BARBADOS) SRL	Barbados
VALERO BROWNSVILLE TERMINAL LLC	Texas
VALERO CANADA FINANCE, INC.	Delaware
VALERO CANADA L.P.	Newfoundland
VALERO CAPITAL CORPORATION	Delaware
VALERO CARIBBEAN SERVICES COMPANY	Delaware
VALERO COKER CORPORATION ARUBA N.V.	Aruba
VALERO CUSTOMS & TRADE SERVICES, INC.	Delaware
VALERO EAST BAY LLC	Delaware
VALERO ENERGY ARUBA II COMPANY	Cayman Islands
VALERO ENERGY INC.	Canada
VALERO ENERGY (IRELAND) LIMITED	Ireland
VALERO ENERGY LTD	England and Wales
VALERO ENERGY PARTNERS GP LLC	Delaware
VALERO ENERGY PARTNERS LP	Delaware
VALERO ENERGY UK LTD	England and Wales
VALERO ENTERPRISES, INC.	Delaware
VALERO EQUITY SERVICES LTD	England and Wales
VALERO FINANCE L.P. I	Newfoundland
VALERO FINANCE L.P. II	Newfoundland
VALERO FINANCE L.P. III	Newfoundland
VALERO GRAIN MARKETING, LLC	Texas
VALERO H2 PIPELINE COMPANY LLC	Delaware
VALERO HOLDCO UK LTD	United Kingdom
VALERO HOLDINGS, INC.	Delaware
VALERO INTERNATIONAL HOLDINGS, INC.	Nevada
VALERO LIVE OAK LLC	Texas
VALERO LOGISTICS UK LTD	England and Wales
VALERO MARKETING AND SUPPLY COMPANY	Delaware
VALERO MARKETING AND SUPPLY DE MÉXICO S.A. DE C.V.	Mexico
VALERO MARKETING AND SUPPY INTERNATIONAL LTD.	Cayman Islands
VALERO MARKETING AND SUPPLY (PANAMA) LLC	Delaware
VALERO MARKETING IRELAND LIMITED	Ireland
VALERO MKS LOGISTICS, L.L.C.	Delaware
VALERO NEDERLAND COÖPERATIEF U.A.	The Netherlands
VALERO NEW AMSTERDAM B.V.	The Netherlands
VALERO OMEGA COMPANY, L.L.C.	Delaware
VALERO OPERATIONAL SERVICES DE MÉXICO, S.A. DE C.V.	Mexico

VALERO OPERATIONS SUPPORT, LTD	England and Wales
VALERO PARTNERS CCTS, LLC	Delaware
VALERO PARTNERS CORPUS EAST, LLC	Delaware
VALERO PARTNERS CORPUS WEST, LLC	Delaware
VALERO PARTNERS EP, LLC	Delaware
VALERO PARTNERS HOUSTON, LLC	Delaware
VALERO PARTNERS LOUISIANA, LLC	Delaware
VALERO PARTNERS LUCAS, LLC	Delaware
VALERO PARTNERS MCKEE, LLC	Delaware
VALERO PARTNERS MEMPHIS, LLC	Delaware
VALERO PARTNERS MERAUX, LLC	Delaware
VALERO PARTNERS NORTH TEXAS, LLC	Delaware
VALERO PARTNERS OPERATING CO. LLC	Delaware
VALERO PARTNERS PAPS, LLC	Delaware
VALERO PARTNERS PORT ARTHUR, LLC	Delaware
VALERO PARTNERS SOUTH TEXAS, LLC	Delaware
VALERO PARTNERS TEXAS CITY, LLC	Delaware
VALERO PARTNERS THREE RIVERS, LLC	Delaware
VALERO PARTNERS WEST MEMPHIS, LLC	Delaware
VALERO PARTNERS WEST TEXAS, LLC	Delaware
VALERO PARTNERS WYNNEWOOD, LLC	Delaware
VALERO PAYMENT SERVICES COMPANY	Virginia
VALERO PEMBROKESHIRE LLC	Delaware
VALERO PLAINS COMPANY LLC	Texas
VALERO POWER MARKETING LLC	Delaware
VALERO RAIL OPERATIONS DE MÉXICO, S.A. DE C.V.	Mexico
VALERO RAIL PARTNERS, LLC	Delaware
VALERO REFINING AND MARKETING COMPANY	Delaware
VALERO REFINING COMPANY-ARUBA N.V.	Aruba
VALERO REFINING COMPANY-CALIFORNIA	Delaware
VALERO REFINING COMPANY-OKLAHOMA	Michigan
VALERO REFINING COMPANY-TENNESSEE, L.L.C.	Delaware
VALERO REFINING-MERAUX LLC	Delaware
VALERO REFINING-NEW ORLEANS, L.L.C.	Delaware
VALERO REFINING-TEXAS, L.P.	Texas
VALERO RENEWABLE FUELS COMPANY, LLC	Texas
VALERO SECURITY SYSTEMS, INC.	Delaware
VALERO SERVICES, INC.	Delaware
VALERO SKELLYTOWN PIPELINE, LLC	Delaware
VALERO TEJAS COMPANY LLC	Delaware
VALERO TERMINALING AND DISTRIBUTION COMPANY	Delaware
VALERO TERMINALING AND DISTRIBUTION DE MEXICO, S.A. DE C.V.	Mexico
VALERO TEXAS POWER MARKETING, INC.	Delaware
VALERO ULTRAMAR HOLDINGS INC.	Delaware
VALERO UNIT INVESTMENTS, L.L.C.	Delaware
VALERO WEST WALES LLC	Delaware

VRG PROPERTIES COMPANY	Delaware
VTD PROPERTIES COMPANY	Delaware
WARSHALL COMPANY LLC	Delaware

Exhibit 23.01

Consent of Independent Registered Public Accounting Firm

The board of directors
Valero Energy Corporation and subsidiaries:

We consent to the incorporation by reference in the registration statements, as amended, on Form S-3 (Registration No. 333-202635) and Form S-8 (Registration Nos. 333-81858, 333-106620, 333-129032, 333-136333, 333-174721, and 333-205756) of Valero Energy Corporation and subsidiaries of our reports dated February 28, 2018, with respect to the consolidated balance sheets of Valero Energy Corporation and subsidiaries as of December 31, 2017 and 2016, the related consolidated statements of income, comprehensive income, equity, and cash flows for each of the years in the three-year period ended December 31, 2017, and the related notes (collectively, the "consolidated financial statements"), and the effectiveness of internal control over financial reporting as of December 31, 2017, which reports appear in the December 31, 2017 annual report on Form 10-K of Valero Energy Corporation and subsidiaries.

/s/ KPMG LLP

San Antonio, Texas
February 28, 2018

Exhibit 31.01

CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002

I, Joseph W. Gorder, certify that:

1. I have reviewed this annual report on Form 10-K of Valero Energy Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2018

/s/ Joseph W. Gorder

Joseph W. Gorder
Chief Executive Officer and President

Exhibit 31.02

CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002

I, Michael S. Ciskowski, certify that:

1. I have reviewed this annual report on Form 10-K of Valero Energy Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2018

/s/ Michael S. Ciskowski

Michael S. Ciskowski
Executive Vice President and Chief Financial Officer

Exhibit 32.01

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Valero Energy Corporation (the Company) on Form 10-K for the year ended December 31, 2017, as filed with the Securities and Exchange Commission on the date hereof (the Report), the undersigned hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Joseph W. Gorder

Joseph W. Gorder
Chief Executive Officer and President
February 28, 2018

A signed original of the written statement required by Section 906 has been provided to Valero Energy Corporation and will be retained by Valero Energy Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Valero Energy Corporation (the Company) on Form 10-K for the year ended December 31, 2017, as filed with the Securities and Exchange Commission on the date hereof (the Report), the undersigned hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Michael S. Ciskowski

Michael S. Ciskowski
Executive Vice President and Chief Financial Officer
February 28, 2018

A signed original of the written statement required by Section 906 has been provided to Valero Energy Corporation and will be retained by Valero Energy Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 99.01

VALERO ENERGY CORPORATION

Audit Committee Pre-Approval Policy

I. **Statement of Principles**

Pursuant to Section 10A of the Securities Exchange Act of 1934, as amended by Section 202 of the Sarbanes-Oxley Act of 2002 ("SOX Act"), the Audit Committee of the board of directors (the "Audit Committee") of Valero Energy Corporation (the "Company") is required to pre-approve the audit and non-audit services performed by the Company's independent auditor to assure that the provision of such services does not impair the auditor's independence. The SEC's rules establish two approaches for pre-approving services. The two approaches are not mutually exclusive:

- the Audit Committee may pre-approve each particular service on a case-by-case basis ("*separate pre-approval*"), and
- the Audit Committee may adopt a pre-approval policy that is detailed as to the particular types of services that may be provided by the independent auditor without consideration by the Audit Committee on a case-by-case basis ("*policy-based pre-approval*").

The Audit Committee believes that a combination of these approaches will provide an effective and efficient procedure to pre-approve services performed by the independent auditor. Therefore, unless a type of service has received policy-based pre-approval (as specifically identified in the appendices to this policy), it will require separate pre-approval by the Audit Committee.

The appendices to this policy contain lists of services that have received policy-based pre-approval of this Audit Committee in the following categories (categorized in accordance with the SEC's rules):

- Audit Services
- Audit-Related Services
- Tax Services
- All Other Services

II. **Term of Pre-Approvals**

The term of the policy-based pre-approvals stated in the appendices to this policy is the period from January 1, 2018 to January 31, 2021, unless the Audit Committee specifically provides for a different period. The Audit Committee will review and pre-approve the services that may be provided by the independent auditor. The Audit Committee will revise the list of policy-based pre-approved services from time to time as the Committee deems necessary or appropriate.

III. Delegation

In accordance with the SOX Act and SEC rules, the Audit Committee hereby delegates to its Chairman the authority to grant separate pre-approvals of services and fees in accordance with this policy. The Audit Committee may further delegate pre-approval authority from time to time to one or more of its other members in its discretion. Any committee member to whom pre-approval authority is delegated shall report any pre-approval decisions to the full Audit Committee at its next meeting. The Audit Committee does not delegate its responsibilities to pre-approve services to any member of the Company's management.

The Audit Committee recognizes that the Company's independent auditor provides and may provide services to Valero Energy Partners LP and/or any one or more of its consolidated subsidiaries (the "Partnership"). The Audit Committee acknowledges that the audit committee of the board of directors of Valero Energy Partners GP LLC (the "VLP Audit Committee") approves, pursuant to the terms of the *Valero Energy Partners GP LLC Audit Committee Pre-Approval Policy* (the "VLP Policy"), the services of the Partnership's independent auditor when those services are rendered for or at the request of the Partnership. This Audit Committee hereby delegates to the VLP Audit Committee the authority of this Audit Committee to approve and/or pre-approve—to the extent required or recommended by statute, regulation, policy, or guidance—all services of the Partnership's independent auditor when the services are rendered to or for the Partnership, provided that such approval by the VLP Audit Committee is made in accordance with the terms of the VLP Policy, as that policy may be in effect from time to time.

IV. Services for which *Separate* Pre-Approval is Required

The terms and fees for the following services of the independent auditor require *separate* pre-approval by the Audit Committee:

- the annual financial statement audit, including all audits, reviews, procedures and other services required to be performed by the independent auditor to form an opinion on the Company's consolidated financial statements, and
- the annual audit of the Company's internal control over financial reporting, including all services required to be performed by the independent auditor to issue its report on the effectiveness of the Company's internal control over financial reporting.

The Audit Committee will monitor these engagements as it deems appropriate, and will approve, if necessary, any changes in terms, conditions and fees resulting from changes in engagement scope, changes in the Company's structure or other matters.

V. Services for which *Policy-Based* Pre-Approval is Available

A. Audit Services

The Audit Committee may grant *policy-based* pre-approval for Audit Services other than the services described in Section IV above. These Audit Services are generally services that only the Company's independent auditor reasonably can provide, and include:

- services associated with SEC registration statements (*e.g.*, comfort letters, consents), periodic reports and other documents filed with the SEC or other documents issued in connection with securities offerings,
- statutory audits or financial audits for subsidiaries or affiliates of the Company.

The Audit Committee has given policy-based pre-approval for the Audit Services listed in Appendix A. All other Audit Services must be separately pre-approved by the Audit Committee.

B. Audit-Related Services

Audit-Related Services are assurance and related services that are reasonably related to the performance of the annual audit or quarterly review of the Company's financial statements or that are traditionally performed by the independent auditor. The Audit Committee may grant policy-based pre-approval for Audit-Related Services. These services would include:

- employee benefit plan audits, and
- due diligence services related to proposed mergers and acquisitions.

The Audit Committee believes that the provision of the Audit-Related Services listed in Appendix B does not impair the independence of the auditor, and has given policy-based pre-approval for the Audit-Related Services listed in Appendix B. All other Audit-Related Services must be separately pre-approved by the Audit Committee.

C. Tax Services

The Audit Committee believes that the independent auditor can provide Tax Services to the Company such as tax compliance, tax planning and tax advice without impairing the auditor's independence. However, the Audit Committee will not permit the retention of the independent auditor in connection with a transaction initially recommended by the independent auditor, the purpose of which may be tax avoidance and the tax treatment of which may not be supported in the U.S. Internal Revenue Code and related regulations or in the tax laws and regulations of any jurisdiction in which the Company is subject to taxation. In addition, the independent auditor may not provide any tax services to the Company that are deemed to be incompatible with auditor independence per standards promulgated by the Public Company Accounting Oversight Board ("PCAOB").

The Audit Committee has given policy-based pre-approval for the Tax Services listed in Appendix C. All other Tax Services must be separately pre-approved by the Audit Committee, including Tax Services related to large and complex transactions and Tax Services proposed to be provided by the independent auditor to any executive officer or director of the Company, in his or her individual capacity, when such services are paid for by the Company.

D. All Other Services

The Audit Committee may grant policy-based pre-approval for those permissible non-audit services classified as All Other Services that it believes are routine, recurring services that would not impair the independence of the auditor. The Audit Committee has given policy-based pre-approval for the All Other Services listed in Appendix D. Any permissible All Other Services that are not listed in Appendix D must be separately pre-approved by the Audit Committee.

VI. Prohibited Services

A list of the SEC's prohibited non-audit services is attached to this policy as Appendix E. The list sets forth the several services that the SOX Act and the SEC have specifically identified as services that may not be performed by the Company's independent auditor. The Audit Committee will consult the SEC's rules and relevant guidance, with the assistance of counsel when necessary or appropriate, to determine whether any proposed service by the independent auditor falls within any category of prohibited non-audit services.

In addition, the independent auditor may not provide any service or product to the Company for a *contingent fee* (as defined and interpreted by the SEC pursuant to Rule 2-01(c)(5) of Regulation S-X) or a commission, or pursuant to an agreement (written or otherwise) by the Company to pay a "value added" fee based on the results of the independent auditor's performance of a service.

VII. Pre-Approval Fee Levels

Pre-approval fee levels for all services to be provided by the independent auditor have been established by the Audit Committee. All services that have received policy-based pre-approval are subject to the annual pre-approval fee levels set forth in the appendices to this policy. Any proposed services exceeding these amounts will require separate pre-approval by the Audit Committee or by any person to whom pre-approval authority is granted under Section III above. Unused pre-approval amounts from one year may not be carried forward to the next year.

VIII. Procedures

Requests or applications to provide services that require separate approval by the Audit Committee must be submitted to the Audit Committee by both the independent auditor and the Company's Chief Financial Officer (or his designee), and must be consistent with the SEC's rules on auditor independence. In connection with the Audit Committee's consideration of any proposed service, the independent auditor, at the Committee's request, will provide to the Audit Committee detailed documentation regarding the specific services to be provided so that the Committee can make a well-reasoned assessment of the impact of the service on the auditor's independence.

The Audit Committee hereby designates the Company's Vice President of Internal Audit (the "Monitor") to monitor the performance of all services provided by the independent auditor and to determine whether such services are in compliance with this policy. The Monitor will report to the Audit Committee on a periodic basis the results of his monitoring.

Appendix A

Pre-Approved AUDIT SERVICES

Service
assistance with and review of documents filed with the SEC including registration statements, reports on Forms 10-K and 10-Q, and other documents
services associated with other documents issued in connection with securities offerings (*e.g.*, comfort letters, consents)
assistance in responding to SEC comment letters
statutory audits (*e.g.*, FERC and insurance audits) and financial audits for subsidiaries of the Company, to include services normally provided by the Company's independent auditor in connection with statutory and regulatory filings
certificates, letters and opinions issued to regulators, agencies and other third-parties (*e.g.*, insurance, banking, environmental) regarding the Company's assets and/or operations that only the Company's independent auditors reasonably can provide
consultations concerning principles of accounting and/or financial reporting treatment under standards or interpretations by the SEC, PCAOB, FASB or other regulatory or standard-setting bodies necessary to reach an audit judgment and/or opinion on the Company's financial statements
Annual pre-approval fee limit for Audit Services (other than services pertaining to registration statements or prospectuses in connection with securities offerings) $1,000,000
Annual pre-approval fee limit for Audit Services pertaining to registration statements or prospectuses in connection with securities offerings $250,000 per registration statement or prospectus

Appendix B

Pre-Approved AUDIT-RELATED SERVICES

Service
due diligence services pertaining to potential business acquisitions or dispositions
financial statement audits of employee benefit plans
accounting consultations and audits in connection with acquisitions
consultations concerning principles of accounting and/or financial reporting treatment under standards or interpretations by the SEC, PCAOB, FASB or other regulatory or standard-setting bodies *outside* those consultations necessary to perform an audit or review of Valero's financial statements in accordance with generally accepted auditing standards
Annual pre-approval fee limit for Audit-Related Services $500,000

Appendix C

Pre-Approved TAX SERVICES

Service *Note*: The following are subject to the terms of subsection C. of Section V. of this policy.
U.S. federal, state and local tax compliance, including the preparation of original and amended tax returns and claims for refunds
U.S. federal, state and local tax planning and advice, including assistance with tax audits and appeals (but expressly excluding advocacy or litigation services), tax advice related to mergers and acquisitions, tax advice relating to employee benefit plans, and requests for rulings or technical advice from taxing authorities
review of Canadian federal and provincial income tax returns
Canadian federal and provincial tax planning and advice, including assistance with tax audits and appeals (but expressly excluding advocacy or litigation services), and advice relating to the tax effects of certain employee benefit arrangements
review of federal, state, local and international income, franchise, and other tax returns
Annual pre-approval fee limit for Tax Services $250,000

Appendix D

Pre-Approved ALL OTHER SERVICES

Services
Permissible non-audit services that would not impair the independence of the auditor. Expressly excluded from this pre-approval are the prohibited non-audit services listed on Appendix E of this policy.
Annual pre-approval fee limit for All Other Services $ 150,000

Appendix E

Prohibited Non-Audit Services

- Bookkeeping or other services related to the accounting records or financial statements of the audit client*
- Financial information systems design and implementation*
- Appraisal or valuation services, fairness opinions or contribution-in-kind reports*
- Actuarial services*
- Internal audit outsourcing services*
- Management functions
- Human resources
- Broker-dealer, investment adviser or investment banking services
- Legal services
- Expert services unrelated to the audit

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* Provision of these non-audit services may be permitted if it is reasonable to conclude that the results of these services will not be subject to audit procedures. Materiality is not an appropriate basis upon which to overcome the rebuttable presumption that prohibited services will be subject to audit procedures.