

**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, 2015

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ **to** _____

Commission file number: 001-34726

LyondellBasell Industries N.V.

(Exact name of registrant as specified in its charter)

The Netherlands

(State or other jurisdiction of
incorporation or organization)

98-0646235

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

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(Registrant's telephone numbers, including area codes)

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

Title of Each Class

Name of Each Exchange On Which Registered

Ordinary Shares, €0.04 Par Value

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 website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the 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, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

Smaller reporting company

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

The aggregate market value of common stock held by non-affiliates of the registrant on June 30, 2015, the last business day of the registrant's most recently completed second fiscal quarter, based on the closing price on that date of \$103.52, was \$41.8 billion. For purposes of this disclosure, in addition to the registrant's executive officers and members of its Supervisory Board, the registrant has included Access Industries, LLC and its affiliates as "affiliates."

The registrant had 432,200,532 shares outstanding at February 11, 2016 (excluding 146,234,738 treasury shares).

Documents incorporated by reference:

Portions of the Notice of the 2016 Annual General Meeting of Shareholders and 2016 Proxy Statement, in connection with the Company's 2016 Annual General Meeting of Shareholders (in Part III), as indicated herein.

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

This report includes “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 (the “Exchange Act”). You can identify our forward-looking statements by the words “anticipate,” “estimate,” “believe,” “continue,” “could,” “intend,” “may,” “plan,” “potential,” “predict,” “should,” “will,” “expect,” “objective,” “projection,” “forecast,” “goal,” “guidance,” “outlook,” “effort,” “target” and similar expressions.

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

- the cost of raw materials represents a substantial portion of our operating expenses, and energy costs generally follow price trends of crude oil, natural gas liquids and/or natural gas; price volatility can significantly affect our results of operations and we may be unable to pass raw material and energy cost increases on to our customers due to the significant competition that we face, the commodity nature of our products and the time required to implement pricing changes;
- our U.S. operations have benefited from low-cost natural gas and natural gas liquids; decreased availability of these materials (for example, from their export or regulations impacting hydraulic fracturing in the U.S.) could reduce the current benefits we receive;
- if crude oil prices continue to fall materially, or continue to decrease relative to U.S. natural gas prices, we would see less benefit from low-cost natural gas and natural gas liquids and it could have a negative effect on our results of operations;
- industry production capacities and operating rates may lead to periods of oversupply and low profitability; for example, there has been substantial capacity expansions announced in the U.S. olefins industry;
- we may face unplanned operating interruptions (including leaks, explosions, fires, weather-related incidents, mechanical failures, unscheduled downtime, supplier disruptions, labor shortages, strikes, work stoppages or other labor difficulties, transportation interruptions, spills and releases and other environmental incidents) at any of our facilities, which would negatively impact our operating results; for example, because the Houston refinery is our only refining operation, we would not have the ability to increase production elsewhere to mitigate the impact of any outage at that facility;
- regulations may negatively impact our business by, among other things, restricting our operations, increasing costs of operations or requiring significant capital expenditures;
- we may not be able to protect our market position or otherwise pass on cost increases to our customers due to the significant competition we face as a result of the commodity nature of many of our products;
- changes in general economic, business, political and regulatory conditions in the countries or regions in which we operate could increase our costs, restrict our operations and reduce our operating results;
- our ability to implement business strategies and execute our organic growth plans may be negatively affected or restricted by, among other things, our ability to complete projects on time and on budget and other events that may affect our ability to execute projects and strategies;
- uncertainties associated with worldwide economies could create reductions in demand and pricing, as well as increased counterparty risks, which could reduce liquidity or cause financial losses resulting from counterparty default;

- the negative outcome of any legal, tax and environmental proceedings or changes in laws or regulations regarding legal, tax and environmental matters may increase our costs or otherwise limit our ability to achieve savings under current regulations;
- any loss or non-renewal of favorable tax treatment under agreements or treaties, or changes in laws, regulations or treaties, may substantially increase our tax liabilities;
- we may be required to reduce production or idle certain facilities because of the cyclical and volatile nature of the supply-demand balance in the chemical and refining industries, which would negatively affect our operating results;
- we rely on continuing technological innovation, and an inability to protect our technology, or others' technological developments could negatively impact our competitive position;
- we have significant international operations, and continued economic uncertainties, fluctuations in exchange rates, valuations of currencies and our possible inability to access cash from operations in certain jurisdictions on a tax-efficient basis, if at all, could negatively affect our liquidity and our results of operations;
- we are subject to the risks of doing business at a global level, including wars, terrorist activities, political and economic instability and disruptions and changes in governmental policies, which could cause increased expenses, decreased demand or prices for our products and/or disruptions in operations, all of which could reduce our operating results;
- if we are unable to comply with the terms of our credit facilities, indebtedness and other financing arrangements, those obligations could be accelerated, which we may not be able to repay; and
- we may be unable to incur additional indebtedness or obtain financing on terms that we deem acceptable, including for refinancing of our current obligations; higher interest rates and costs of financing would increase our expenses.

Any of these factors, or a combination of these factors, could materially affect our future results of operations and the ultimate accuracy of the forward-looking statements. These forward-looking statements are not guarantees of future performance, and our actual results and future developments may differ materially from those projected in the forward-looking statements. Our management cautions against putting undue reliance on forward-looking statements or projecting any future results based on such statements or present or prior earnings levels.

All subsequent written and oral forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section and any other cautionary statements that may accompany such forward-looking statements. Except as otherwise required by applicable law, we disclaim any duty to update any forward-looking statements. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the "Risk Factors" section of this report on page 22.

PART I

Items 1 and 2. Business and Properties

OVERVIEW

LyondellBasell Industries N.V. is a global, independent chemical company and was incorporated under Dutch law on October 15, 2009. Unless otherwise indicated, the “Company,” “we,” “our,” “us” and “LyondellBasell” are used in this report to refer to the businesses of LyondellBasell Industries N.V. and its consolidated subsidiaries. We are one of the world’s top five independent chemical companies based on revenues.

We participate globally across the petrochemical value chain and are an industry leader in many of our product lines. Our chemicals businesses consist primarily of large processing plants that convert large volumes of liquid and gaseous hydrocarbon feedstocks into plastic resins and other chemicals. Our chemical products tend to be basic building blocks for other chemicals and plastics, while our plastic products are typically used in large volume applications. Our customers use our plastics and chemicals to manufacture a wide range of products that people use in their everyday lives including food packaging, home furnishings, automotive components, paints and coatings. Our refining business consists of our Houston refinery, which processes crude oil into products such as gasoline, diesel and jet fuel.

Our financial performance is influenced in general by the supply and demand for the products that we produce, the cost and availability of feedstocks, global and regional competitor capacity, our operational efficiency and our ability to control costs. We have a strong operational focus and, as a producer of large volume commodities, continuously strive to differentiate ourselves through safe, reliable and low-cost operations in all our businesses. During recent years the cost of natural gas-derived raw materials in the U.S. versus the global cost of crude oil-derived raw materials has had a significant positive influence on the profitability of our North American operations. While the North American feedstock advantage declined with lower oil prices in 2015, improved product supply and demand fundamentals in several businesses, notably global polyolefins products, more than offset the decline. To a lesser extent, our differentiated assets and technology also positively influence our performance as compared to our peers and competitors. These include our propylene oxide and polypropylene technologies; flexible feedstock olefins plants in the U.S.; joint venture olefins and polyolefins plants with access to low-cost feedstock, particularly in Saudi Arabia; and our Houston refinery, which is capable of processing heavy, high-sulfur crude.

SEGMENTS

We manage our operations through five operating segments. Our reportable segments are:

- *Olefins and Polyolefins—Americas* (“O&P—Americas”). Our O&P—Americas segment produces and markets olefins, including ethylene and ethylene co-products, and polyolefins.
- *Olefins and Polyolefins—Europe, Asia, International* (“O&P—EAI”). Our O&P—EAI segment produces and markets olefins, including ethylene and ethylene co-products, polyolefins and specialty products, including polybutene-1 and polypropylene compounds.
- *Intermediates and Derivatives* (“I&D”). Our I&D segment produces and markets propylene oxide and its co-products, including isobutylene and styrene monomer, and derivatives, acetyls including methanol, ethylene oxide and its derivatives, ethanol and oxygenated fuels, or oxyfuels.
- *Refining*. Our Refining segment refines heavy, high-sulfur crude oil and other crude oils of varied types and sources available on the U.S. Gulf Coast into fuel products including gasoline and distillates (diesel and jet fuels).
- *Technology*. Our Technology segment develops and licenses chemical and polyolefin process technologies and manufactures and sells polyolefin catalysts.

We regularly review our segments and the approach used by management to evaluate performance and resource allocation. At the beginning of 2014, management began using EBITDA (earnings before interest, taxes and depreciation and amortization) as the primary measure for reviewing our segments' profitability. Our comparisons to the prior periods presented were revised to reflect this change.

Financial information about our business segments and geographical areas can be found in Note 22, *Segment and Related Information*, to the Consolidated Financial Statements. Information about the locations where we produce our primary products can be found under "Description of Properties."

In 2015, 2014 and 2013, no single customer accounted for 10% or more of our total revenues.

Olefins and Polyolefins Segments Generally

We are one of the leading worldwide producers of olefins, including ethylene and propylene, and polyethylene ("PE"). We are the world's largest producer of polypropylene ("PP") and PP compounds. We manage our olefin and polyolefin business in two reportable segments, O&P—Americas and O&P—EAI.

Olefins—Ethylene is the most significant petrochemical in terms of worldwide production volume and is the key building block for PE and a large number of other chemicals, plastics and synthetics. The production of ethylene results in co-products such as aromatics and other olefins, including propylene and butadiene. Ethylene and its co-products are fundamental to many parts of the economy, including the production of consumer products, packaging, housing and automotive components and other durable and nondurable goods. In 2015, we completed an expansion project at our Channelview, Texas facility that added 250 million pounds to our annual ethylene capacity, and we further benefited from an 800 million pound per year expansion of our La Porte, Texas ethylene facility that was completed in 2014.

Polyolefins—Polyolefins are thermoplastics and comprise approximately two-thirds of worldwide thermoplastics demand. Since their industrial commercialization, thermoplastics have been used in wide-ranging applications and products that improve safety and comfort and enhance the everyday quality of life. Our products are used in consumer, automotive and industrial applications ranging from food and beverage packaging to housewares and construction materials. We produce high density polyethylene ("HDPE"), low density polyethylene ("LDPE") and linear low density polyethylene ("LLDPE"). We also produce PP homopolymers, PP impact copolymers and PP random copolymers. We produce and market several specialty product lines, including PP compounds, *Catalloy* process resins and polybutene-1 ("PB-1"), focusing on unique polyolefins and compounds that offer a wide range of performance characteristics. Typical properties of such specialty polyolefins and compounds include impact-stiffness balance, scratch resistance, soft touch and heat sealability. End uses include automotive and industrial products and materials. PP compounds are produced from blends of polyolefins and additives and are sold mainly to the automotive and home appliances industries. The *Catalloy* process is proprietary technology that is not licensed to third parties. As a result, we are the only manufacturer of *Catalloy* process resins, which are used primarily in roofing, packaging and automotive applications. PB-1 is a family of butane-based polymers and is mainly used in pipe applications and under-floor heating systems and sanitary water heating systems.

PE sales, including HDPE, LDPE and LLDPE, accounted for approximately 21%, 18% and 17% of our total revenues in 2015, 2014 and 2013, respectively. In 2014, we completed an expansion project at our Matagorda plant in Texas, which added 220 million pounds of HDPE production. PP sales, including *Catalloy*, accounted for approximately 17%, 16% and 16% of our total revenues in 2015, 2014 and 2013, respectively.

The following table outlines the primary products of our O&P segments, annual processing capacity as of December 31, 2015, and the primary uses for those products. Capacities, which are presented in pounds unless otherwise indicated, include 100% of the capacity of our joint venture facilities. The joint ventures' proportional share of capacity is shown in the footnote to the table, below.

<u>Product</u>	<u>Annual Capacity(1)</u>			<u>Primary Uses</u>
	<u>Americas</u>	<u>EAI</u>	<u>Total</u>	
Olefins:				
Ethylene	10.9 billion	6.5 billion	17.4 billion	Ethylene is used as a raw material to manufacture polyethylene, ethylene oxide, ethanol, ethylene dichloride, styrene, vinyl acetate monomer ("VAM") and other products.
Propylene	5.5 billion	6.0 billion	11.5 billion	Propylene is used to produce PP, acrylonitrile, propylene oxide ("PO") and other products.
Butadiene	1.1 billion	670 million	1.7 billion	Butadiene is used to manufacture styrene-butadiene rubber and polybutadiene rubber, which are used in the manufacture of tires, hoses, gaskets and other rubber products. Butadiene is also used in the production of paints, adhesives, nylon clothing, carpets, paper coatings and engineered plastics.
Polyolefins:				
HDPE	3.6 billion	4.2 billion	7.8 billion	HDPE is used to manufacture grocery, merchandise and trash bags; food containers for items from frozen desserts to margarine; plastic caps and closures; liners for boxes of cereal and crackers; plastic drink cups and toys; dairy crates; bread trays; pails for items from paint to fresh fruits and vegetables; safety equipment, such as hard hats; house wrap for insulation; bottles for household and industrial chemicals and motor oil; milk, water, and juice bottles; large tanks for storing liquids such as agricultural and lawn care chemicals; and pipe.
LDPE	1.3 billion	2.8 billion	4.1 billion	LDPE is used to manufacture food packaging films; plastic bottles for packaging food and personal care items; dry cleaning bags; ice bags; pallet shrink wrap; heavy-duty bags for mulch and potting soil; boil-in-bags; coatings on flexible packaging products; and coatings on paper board such as milk cartons.

<u>Product</u>	<u>Annual Capacity(1)</u>			<u>Primary Uses</u>
	<u>Americas</u>	<u>EAI</u>	<u>Total</u>	
LLDPE	1.3 billion	—	1.3 billion	LLDPE is used to manufacture garbage and lawn-leaf bags; industrial can liners; housewares; lids for coffee cans and margarine tubs; dishpans, home plastic storage containers, and kitchen trash containers; large toys like outdoor gym sets; drip irrigation tubing; insulating resins and compounds used to insulate copper and fiber optic wiring; shrink wrap for multi-packaging canned food, bag-in-box bags, produce bags, and pallet stretch wrap.
PP	4.4 billion	12.6 billion	17.0 billion	PP is primarily used to manufacture fibers for carpets, rugs and upholstery; housewares; medical products; automotive interior trim, fascia, running boards, battery cases, and bumpers; toys and sporting goods; fishing tackle boxes; and bottle caps and closures.
Specialty Polyolefins:				
PP compounds	—	2.8 billion	2.8 billion	PP compounds are used to manufacture automotive interior and exterior trims, dashboards, bumpers and under-hood applications; base material for products and parts used in appliances; anti-corrosion coatings for steel piping, wire and cable.
<i>Catalloy</i> process resins	600 million	600 million	1.2 billion	<i>Catalloy</i> process resins are used primarily in modifying polymer properties in film applications and molded products; for specialty films, geomembrane liners, and roofing materials; in bitumen modification for roofing and asphalt applications; and for automotive bumpers.
PB-1 resins	—	110 million	110 million	PB-1 resins are used in flexible pipes, resins for seal-peel film, film modification, hot melt applications, consumer packaging and adhesives.
Aromatics:				
Benzene (in gallons) ...	195 million	—	195 million	Benzene is used to produce styrene, phenol and cyclohexane. These products are used in the production of nylon, plastics, synthetic rubber and polystyrene. Polystyrene is used in insulation, packaging and drink cups.

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- (1) Represents total annual nameplate capacity, which includes approximately 1,650 million pounds of ethylene; approximately 2,500 million pounds of propylene; approximately 1,010 million pounds of HDPE; approximately 780 million pounds of LDPE; approximately 670 million pounds (O&P—Americas) and 4,960 million pounds (O&P—EAI) of PP; and approximately 200 million pounds of PP compounds of nameplate capacity owned by third parties either through joint venture arrangements or other contractual relationships. In some situations, the Company and the third parties may have access to the other's capacity through certain arrangements.

Olefins and Polyolefins—Americas Segment

Overview

Our O&P—Americas segment produces and markets olefins, polyolefins, aromatics, specialty products and ethylene co-products. In addition, we produce specialty products including *Catalloy* and *Plexar* resins.

Sales & Marketing / Customers

Our ethylene production is consumed internally as a raw material in the production of polymers and other derivatives, with the balance sold to third party customers under multi-year contracts or on a spot basis. In 2015 we completed a 250 million pound per year expansion at our Channelview, Texas facility, following an 800 million pound per year expansion of our La Porte, Texas facility completed in mid-2014. We have also announced ethylene expansion projects for our Corpus Christi, Texas facility in 2016.

We are a net purchaser of propylene, a raw material used in the production of PO, PP and other derivatives. Our butadiene production is sold to the external market under multi-year contracts. All of our benzene production is used as a raw material in the production of styrene by our I&D segment.

In addition to purchases of propylene, at times we purchase ethylene and butadiene for resale, when necessary, to satisfy customer demand above our own production levels. Volumes of any of these products purchased for resale can vary significantly from period to period. However, purchased volumes have not historically had a significant impact on profits.

In the U.S., most of the ethylene and propylene production of our Channelview, Corpus Christi and La Porte, Texas facilities is shipped via a pipeline system, which has connections to numerous U.S. Gulf Coast consumers. This pipeline extends from Corpus Christi to Mont Belvieu, Texas. In addition, exchange agreements with other ethylene and co-products producers allow access to customers who are not directly connected to this pipeline system. Some ethylene is shipped by rail car from Clinton, Iowa to Morris, Illinois and some is shipped directly to customers. A pipeline owned and operated by an unrelated party is used to transport ethylene from Morris, Illinois to Tuscola, Illinois where it is used as a raw material in the production of ethanol. Some propylene is shipped by ocean going vessel. Butadiene, benzene, toluene and other products are distributed by pipeline, rail car, truck, barge or ocean going vessel.

Our PP and PE production is typically sold through our sales organization to an extensive base of established customers and distributors servicing both the domestic and export markets either under annual contracts or on a spot basis. We have regional sales offices in various locations in North America and our polyolefins primarily are transported in North America by railcar or truck. Export sales are generally to customers in Central and South America. We also sell PP to our PP compounds business, which is managed worldwide by our O&P—EAI segment.

Joint Venture Relationships

We participate in a joint venture arrangement in Mexico, which provides us with capacity for approximately 640 million pounds of PP production. The capacity is based on our percentage ownership of the joint ventures' total capacity. We do not hold a majority interest in or have operational control of this joint venture.

Raw Materials

Raw material cost is the largest component of the total cost for the production of ethylene and its co-products. The primary raw materials that can be used in our Americas olefin facilities are heavy liquids and natural gas liquids (“NGLs”). Heavy liquids include crude oil-based naphtha and other refined products, as well as domestically sourced condensate, a very light crude oil resulting from natural gas production (collectively referred to as “heavy liquids”). NGLs include ethane, propane and butane. The use of heavy liquid raw materials results in the production of a significant amount of co-products such as propylene, butadiene and benzene, as well as gasoline blending components, while the use of NGLs results in the production of a smaller amount of co-products.

Our ability to pass through raw material price increases to our customers is dependent upon market-driven demand for olefins and polyolefins. Sales prices for products sold in the spot market are determined by market forces. Our contract prices are influenced by spot prices, indices published in industry publications and cost recovery formulas in the contracts.

Prior to 2010, facilities using heavy liquids as feedstock usually generated higher margins than those using NGLs. However, in recent years NGLs, particularly in the United States, have had a significant cost advantage over heavy liquids due to technological advances for extracting shale gas which have led to an increased supply of NGLs. This cost advantage was lower in 2015 than in prior years, but was still significant. A plant’s flexibility to consume a wide range of raw materials generally will provide an advantage over plants that are restricted in their processing capabilities. Our Americas facilities can process significant quantities of either heavy liquids or NGLs. We estimate that in the U.S. we can produce up to approximately 90% of our total ethylene output using NGLs. Changes in the raw material feedstock utilized in the production process will result in variances in production capacities among products. We believe our raw material flexibility in the U.S. is a key advantage in our production of ethylene and its co-products.

In North America, we also purchase large amounts of natural gas that is used primarily as an energy source in our business and as the primary feedstock for methanol production by our I&D segment. The purchases are generally market-based contractual arrangements with multiple suppliers.

Industry Dynamics / Competition

With respect to olefins and polyolefins, competition is based on price, product quality, product delivery, reliability of supply, product performance and customer service. Industry consolidation in North America has led to fewer, although larger, competitors. Profitability is affected not only by supply and demand for olefins and polyolefins, but also by raw material costs and price competition among producers, which may intensify due to, among other things, the addition of new capacity. In general, demand is a function of worldwide economic growth, including the regional dynamics that underlie global growth trends.

We compete in North America with other large marketers and producers, including global chemical companies, chemical divisions of large oil companies and regional marketers and producers.

Based on published data, we believe we were, as of December 31, 2015:

- the second largest producer of ethylene in North America, with ethylene rated capacity of 10.9 billion pounds per year, or approximately 14% of total North American ethylene production capacity;
- the third largest producer of PE in North America with 6.2 billion pounds per year of capacity, or approximately 14% of North American capacity; and
- the largest producer of PP in North America, including our share of our Indelpro joint venture capacity, with 3.3 billion pounds, or approximately 18% of the North American capacity.

Olefins and Polyolefins—Europe, Asia, International Segment

Overview

Our O&P—EAI segment produces and markets olefins, including ethylene and ethylene co-products, and polyolefins. In addition, we produce significant quantities of specialty products such as *Catalloy* process resins and PB-1. Our O&P—EAI segment manages our worldwide PP compound business (including our PP compounds facilities in North and South America), our worldwide PB-1 business, and our *Catalloy* process resins produced in Europe.

Sales & Marketing / Customers

Our ethylene production is primarily consumed internally as a raw material in the production of polymers and we purchase additional ethylene to meet our production needs. Our propylene production is used as a raw material in the production of PO and PP, and we purchase propylene because our internal needs exceed our internal production. European ethylene production is generally fully integrated with our downstream facilities in Europe.

We produce and sell butadiene to external customers under multi-year contracts and on a spot basis.

With respect to PP and PE, our production is typically sold through our sales organization to an extensive base of established customers under annual contracts or on a spot basis and is also sold through distributors. Our polyolefins are transported in Europe primarily by railcar or truck. We believe that, over a business cycle, average sales prices and profit margins for specialty polymers tend to be higher than average sales prices and profit margins for higher-volume commodity polyolefins or polymers.

Our regional sales offices are in various locations, including The Netherlands, Hong Kong, China, India, Australia and the United Arab Emirates. We also operate through a worldwide network of local sales and representative offices in Europe, Asia and Africa. Our joint ventures described below typically manage their domestic sales and marketing efforts independently, and we typically operate as their agent/distributor for all or a portion of their exports.

Joint Venture Relationships

We participate in several manufacturing joint ventures in Saudi Arabia, Thailand, Poland, Australia, Japan and South Korea. We do not hold majority interests in any of these joint ventures, nor do we have operational control. These ventures provide us with additional production capacity of approximately 2,630 million pounds of PP, approximately 810 million pounds of propylene, approximately 550 million pounds of ethylene, approximately 570 million pounds of HDPE, approximately 340 million pounds of LDPE and approximately 160 million pounds of PP compounds. These capacities are based on our percentage ownership interest in the joint ventures' total capacities. We realize profits or losses from these ventures as income (or loss) on the equity basis of accounting.

We generally license our polyolefin process technologies and supply catalysts to our joint ventures through our Technology segment. Some of our joint ventures are able to source cost advantaged raw materials from their local shareholders.

Raw Materials

Raw material cost is the largest component of the total cost for the production of ethylene and its co-products. The primary raw materials used in our European olefin facilities are naphtha streams, which are heavier than NGLs; however, in recent years we have sourced increased amounts of advantaged NGLs when the opportunity arises. For our Saudi joint venture facilities, locally sourced and cost advantaged NGLs, including

ethane, propane and butane are used. The principal raw materials used by our polyolefin and *Catalloy* process resin businesses are propylene and ethylene. In Europe, we have the capacity to produce approximately 50% of the propylene requirements of our European PP business and all of the ethylene requirements of our European PE business. Propylene and ethylene requirements that are not produced internally are generally acquired pursuant to long-term contracts with third party suppliers or via spot purchases.

Our PP compounds facilities generally receive their PP and other polymer raw materials from one of our wholly owned or joint venture facilities. PB-1 raw materials are sourced solely from external supply. Some of our joint ventures receive propylene and ethylene from their local shareholders under long-term contracts.

Our ability to pass through the increased cost of raw materials to customers is dependent on global market demand for olefins and polyolefins. In general, the pricing for purchases and sales of most products is determined by global market forces, including the impacts of foreign exchange on the pricing of the underlying heavy liquid raw materials, most of which are priced in U.S. dollars. There can be a lag between observed naphtha raw material price changes in a given month and contract product price changes that were settled prior to the beginning of that month. In such cases, volatility in our product margins may occur.

Industry Dynamics / Competition

With respect to olefins and polyolefins, competition is based on price, product quality, product delivery, reliability of supply, product performance and customer service. We compete with regional and multinational chemical companies and divisions of large oil companies. The petrochemical market in the European Union (“EU”) has been affected by the price volatility of naphtha, the primary feedstock for olefins in the region, as well as fluctuating demand as a result of uncertain European and global economic conditions.

Based on published data and including our proportionate share of our joint ventures, we believe we were, as of December 31, 2015:

- the fifth largest producer of ethylene in Europe with an ethylene rated capacity in Europe of 4.3 billion pounds per year, or approximately 8% of total European ethylene capacity;
- the largest producer of PP in Europe with 5.2 billion pounds per year of capacity, or approximately 22% of European PP capacity;
- the largest producer of PE in Europe with 4.8 billion pounds per year of capacity, or approximately 22% of HDPE and 13% of LDPE European capacity; and
- the largest PP compounds producer in the world with 2.6 billion pounds per year of capacity, with approximately 51% of that capacity in Europe, 21% in North America, and 27% in the rest of the world.

Intermediates and Derivatives Segment

Overview

Our I&D segment produces and markets PO and its co-products and derivatives; acetyls including methanol, ethylene oxide (“EO”) and its derivatives; ethanol; and oxyfuels (methyl tertiary butyl ether (“MTBE”) and ethyl tertiary butyl ether (“ETBE”). PO co-products include styrene monomer (“SM”) and tertiary butyl alcohol (“TBA”), most of which is used to make oxyfuels, isobutylene and tertiary butyl hydro peroxide (“TBHP”). TBA and its products other than oxyfuels are sometimes referred to as C4 chemicals. PO derivatives include propylene glycol (“PG”), propylene glycol ethers (“PGE”) and butanediol (“BDO”). We believe that our proprietary PO and acetyls production process technologies provide us with a cost advantaged position for these products and their derivatives.

We produce PO through two distinct technologies, one of which yields TBA as the co-product and the other of which yields SM as the co-product. The two technologies are mutually exclusive, meaning that a manufacturing facility must be dedicated to either PO/TBA or to PO/SM.

The following table outlines the primary products, annual capacities, and primary uses for the I&D segment's products. Capacities, which are presented in pounds unless otherwise indicated, include 100% of the capacity of joint venture facilities. The joint ventures' proportional share of capacity is shown in the footnote to the table, below.

<u>Product</u>	<u>Annual Capacity(1)</u>	<u>Primary Uses</u>
Propylene Oxide	5.1 billion	PO is a key component of polyols, PG, PGE and BDO.
PO Co-Products:		
Styrene Monomer	5.9 billion	SM is used to produce plastics, such as expandable polystyrene for packaging, foam cups and containers, insulation products and durables and engineering resins.
Tertiary Butyl Alcohol . . .	6.1 billion	TBA is a precursor to isobutylene, MTBE and ETBE. Isobutylene is used in the manufacture of synthetic rubber and lubricant additives as well as gasoline blending components. MTBE and ETBE are high octane gasoline blending components; ETBE incorporates agriculturally produced ethanol.
PO Derivatives:		
Propylene Glycol	1.0 billion	PG is used to produce unsaturated polyester resins for bathroom fixtures and boat hulls; antifreeze, coolants and aircraft deicers; and cosmetics and cleaners.
Propylene Glycol Ethers	540 million	PGE are used as solvents for paints, coatings, cleaners and a variety of electronics applications.
Butanediol	465 million	BDO is used in the manufacture of engineering resins, films, personal care products, pharmaceuticals, coatings, solvents and adhesives.
Acetyls:		
Methanol (in gallons)	480 million	Methanol is a raw material used to produce acetic acid, MTBE, formaldehyde and several other products, including adhesives, foams, plywood subfloors, solvents and windshield washer fluid.
Acetic Acid	1.2 billion	Acetic acid is a raw material used to produce VAM, terephthalic acid (used to produce polyester for textiles and plastic bottles), industrial solvents and a variety of other chemicals.
Vinyl Acetate Monomer . .	700 million	VAM is used to produce a variety of polymers, products used in adhesives, water-based paint, textile coatings and paper coatings.

<u>Product</u>	<u>Annual Capacity(1)</u>	<u>Primary Uses</u>
Ethylene Derivatives:		
Ethylene Oxide	850 million EO equivalents; 400 million as pure EO	EO is used to produce surfactants, industrial cleaners, cosmetics, emulsifiers, paint, heat transfer fluids and ethylene glycol.
Ethylene Glycol (“EG”) . .	650 million	EG is used to produce polyester fibers and film, polyethylene terephthalate resin, heat transfer fluids and automobile antifreeze.
Ethylene Glycol Ethers . . .	300 million	Ethylene glycol ethers are used to produce paint and coatings, polishes, solvents and chemical intermediates.
Ethanol (in gallons)	50 million	Ethanol is used as a fuel and a fuel additive and in the production of solvents as well as household, medicinal and personal care products.

(1) The annual capacities include approximately 2,300 million pounds of PO; approximately 2,750 million pounds of SM; approximately 110 million pounds of PGE; and approximately 40 million gallons of methanol production owned by third parties through joint venture or other contractual relationships.

Sales & Marketing / Customers

We sell our PO and its co-products and derivatives through multi-year sales and processing agreements as well as spot sales. Some of our contract sales agreements have cost plus pricing terms. We sell most of our SM production into the North American, European, Asian, and South American export markets through spot sales and contracts. We purchase SM for resale when necessary to satisfy customer demand that exceeds our production levels. Volumes of SM purchases made for resale can vary significantly from period to period. However, purchased volumes have not historically had a significant impact on profits. PO and its derivatives and SM are transported by barge, ocean going vessel, pipeline, railcar, and tank truck.

Our I&D segment converts most of its TBA, which is produced as a co-product of the PO process, to isobutylene. Over half of the isobutylene is reacted with methanol or ethanol to produce either MTBE or ETBE. The remaining isobutylene is sold into the external market as high-purity grade isobutylene.

In August of 2014, we announced our intention to build a world scale PO/TBA plant on the U.S. Gulf Coast with an annual capacity of 1 billion pounds of PO and 2 billion pounds of TBA and its derivatives. The preliminary timetable is to have the plant operational in 2020.

We sell our MTBE and ETBE production under market and cost-based sales agreements and in the spot market. MTBE and ETBE are transported by barge, ocean going vessel and tank truck. MTBE and ETBE are widely used octane gasoline blending components worldwide outside of the United States due to their blending characteristics and environmental benefits. For example, Japan has elected to use ETBE as a means of meeting its carbon dioxide reduction commitments under the Kyoto Protocol, and we source a significant portion of Japan’s bio-fuels needs. The majority of our plants have the flexibility to produce either MTBE or ETBE to accommodate market needs.

Sales of MTBE, ETBE, acetyls, PO and PO co-products and derivatives are made by our marketing and sales personnel, and also through distributors and independent agents in the Americas, Europe, the Middle East, Africa and the Asia Pacific region.

Acetyls, including acetic acid and VAM, are consumed internally and sold worldwide under multi-year contracts and on a spot basis. Acetic acid and VAM are shipped by barge, ocean going vessel, pipeline, railcar

and tank truck. Sales are made through a direct sales force, agents and distributors. Our acetyls business uses methanol, which we produce internally, as a raw material for our production of acetic acid, solvents and MTBE. We also sell methanol under annual contracts and on a spot basis to large U.S. customers. Methanol is shipped by barge, railcar and pipeline.

EO and EG typically are sold under multi-year contracts and on a spot basis, with market and cost-based pricing. Ethylene glycol ethers are EO derivatives sold primarily into the solvent and distributor segments at market prices. The vast majority of EO and its derivative products are sold in North America, Europe and Asia, primarily through our sales organizations. EO is shipped by railcar or consumed on site. The derivatives are shipped by railcar, truck, isotank, and ocean going vessel.

Joint Venture Relationships

We have two PO joint ventures with Covestro AG (the new holding company under which Bayer AG consolidated its polymer activities), one in the U.S. and one in Europe. We operate four of our U.S. operating units for the U.S. PO joint venture. Covestro's interest represents ownership of an in-kind portion of the PO production of 1.5 billion pounds per year. We take, in-kind, the remaining PO production and all co-product production. The parties' rights in the joint venture are based on off take volumes related to actual production of PO as opposed to ownership percentages. Covestro also has the right to 50% of the PO and SM production of our European PO joint venture. Our proportional production capacity provided through this venture is approximately 340 million pounds of PO and approximately 750 million pounds of SM. We do not share marketing or product sales with Covestro under either of these PO joint ventures.

We also have joint venture manufacturing relationships in China. These ventures provide us with additional production capacity of approximately 115 million pounds of PO. This capacity is based on our operational share of the joint ventures' total capacities.

Raw Materials

The cost of raw materials is generally the largest component of total production cost for PO, its co-products, and its derivatives. Propylene, isobutane or mixed butane, ethylene, and benzene are the primary raw materials used in the production of PO and its co-products. The market prices of these raw materials historically have been related to the price of crude oil, NGLs and natural gas, as well as supply and demand for the raw materials.

In the U.S., we obtain a large portion of our propylene, benzene and ethylene raw materials needed for the production of PO and its co-products from our O&P—Americas segment and a lesser amount from third parties. Raw materials for the non-U.S. production of PO and its co-products are obtained from our O&P—EAI segment and from third parties. We consume a significant portion of our internally-produced PO in the production of PO derivatives.

The raw material requirements not sourced internally are purchased at market-based prices from numerous suppliers in the U.S. and Europe with which we have established contractual relationships, as well as in the spot market.

We purchase our ethanol requirements for the production of ETBE from third parties; the methanol for our MTBE production comes from internal production. Carbon monoxide and methanol are the primary raw materials required for the production of acetic acid. We purchase carbon monoxide pursuant to a long-term contract with pricing primarily based on the cost of production. All methanol required for our production of acetyls is internally sourced. Natural gas is the primary raw material required for the production of methanol.

In addition to ethylene, acetic acid is a primary raw material for the production of VAM. For the production of VAM, we obtain our entire requirements for acetic acid and ethylene from our internal production. Historically, we have used a large percentage of our acetic acid production to produce VAM.

Industry Dynamics / Competition

With respect to PO, its co-products and derivatives, competition is based on a variety of factors, including product quality, price, reliability of supply, technical support, customer service and potential substitute materials. Profitability is affected by the worldwide level of demand along with price competition, which may intensify due to, among other things, new industry capacity and industry outages. PO demand growth could be impacted by further development of alternative bio-based PO derivatives. It is not possible to predict accurately the changes in raw material costs, market conditions and other factors that will affect industry profitability in the future. Our major worldwide competitors for sales of PO, its co-products and derivatives include other multinational chemical companies as well as some regional marketers and producers.

Based on published data, excluding our partners' shares of joint venture capacity, we believe as of December 31, 2015 we were:

- the second largest producer of PO worldwide, with approximately 13% of total worldwide capacity;
- the largest producer of MTBE/ETBE worldwide, with approximately 10% of total worldwide production capacity for these combined oxyfuels;
- the fifth largest producer of SM worldwide, with approximately 5% of total worldwide capacity; and
- the ninth and eighth largest producer of acetic acid and VAM, respectively, each with approximately 3% and 4% of total worldwide capacity.

Refining Segment

Overview

Our Houston refinery, which is located on the Houston Ship Channel in Houston, Texas, has a heavy, high-sulfur crude oil processing capacity of approximately 268,000 barrels per day on a calendar day basis (normal operating basis), or approximately 292,000 barrels per day on a stream day basis (maximum achievable over a 24 hour period). The Houston refinery has a Nelson Complexity Index, a relative measure of the construction costs of a particular refinery based on its crude and upgrading capacity, of 12.5. The Houston refinery is a full conversion refinery designed to refine heavy, high-sulfur crude oil. This crude oil is more viscous and dense than traditional crude oil and contains higher concentrations of sulfur and heavy metals, making it more difficult to refine into gasoline and other high-value fuel products. However, this crude oil has historically been less costly to purchase than light, low-sulfur crude oil such as Brent. In the recent past, certain domestic crude oils such as West Texas Intermediate ("WTI") and West Texas Sour ("WTS") have been priced lower than normal trends due to transportation constraints; however, since 2014 these price differentials have narrowed.

On January 4, 2012, we ceased refinery operations at our Berre refinery in France. The cessation of operations was in accordance with an agreement executed in the fourth quarter of 2011 by certain of our French subsidiaries and union representatives. Additional information about the cessation of operations can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 3, *Discontinued Operations*, to the Consolidated Financial Statements.

The following table outlines the primary products of our Refining segment, annual processing capacities as of as of December 31, 2015, and the primary uses for those products. Capacities are presented in barrels per day.

<u>Product</u>	<u>Capacity(1)</u>	<u>Primary Uses</u>
Gasoline and components	120,000	Automotive fuel
Ultra Low Sulfur Diesel	95,000	Diesel fuel for cars and trucks
Jet Fuel	25,000	Aviation fuel
Lube Oils	4,000	Naphthenic industrial oils and white oils for food-grade applications
Aromatics	7,000	Intermediate chemicals

(1) Only key products for the Houston refinery are identified and, therefore, the sum of capacities shown does not equal the facility's total capacity.

Sales & Marketing / Customers

The Houston refinery's products primarily are sold in bulk to other refiners, marketers, distributors and wholesalers at market-related prices. Most of the Houston refinery's products are sold under contracts with a term of one year or less or are sold in the spot market. The Houston refinery's products generally are transported to customers via pipelines and terminals owned and operated by other parties.

Raw Materials

We purchase the crude oil used as a raw material for the Houston refinery on the open market on a spot basis and under a number of supply agreements with regional producers, generally with terms varying from one to two years.

Industry Dynamics / Competition

Our refining competitors are major integrated oil companies, refineries owned or controlled by foreign governments and independent domestic refiners. Based on published data, as of January 2016, there were 140 operable crude oil refineries in the U.S., and total U.S. refinery capacity was approximately 18.0 million barrels per day. During 2015, the Houston refinery processed an average of approximately 243,000 barrels per day of crude oil, representing approximately 1.4% of all U.S. crude processing capacity.

Our refining operations compete for the purchases of crude oil based on price and quality. Supply disruptions could impact the availability and pricing. We compete in gasoline and distillate markets as a bulk supplier of fungible products satisfying industry and government specifications. Competition is based on price and location.

The markets for fuel products tend to be volatile as well as cyclical as a result of the changing global economy and changing crude oil and refined product prices. Crude oil prices are impacted by worldwide political events, the economics of exploration and production and refined products demand. Prices and demand for fuel products are influenced by seasonal and short-term factors such as weather and driving patterns, as well as by longer term issues such as the economy, energy conservation and alternative fuels. Industry fuel products supply is dependent on short-term industry operating capabilities and on long-term refining capacity.

A crack spread is a benchmark indication of refining margins based on the processing of a specific type of crude oil into an assumed selection of major refined products. The Houston refinery generally tracks the Maya 2-1-1 crack spread, which represents the difference between the current month Gulf Coast price of two

barrels of Maya crude oil as set by Petróleos Mexicanos (“Pemex”) and one barrel each of U.S. Gulf Coast Reformulated Gasoline Blendstock for Oxygen Blending (“RBOB”) Gasoline and of U.S. Gulf Coast Ultralow-sulfur Diesel (“ULSD”). While these benchmark refining spreads are generally indicative of the level of profitability at the Houston refinery and similarly configured refineries, there are many other factors specific to each refinery and the industry in general, which influence operating results such as the value of refinery by-products (products other than gasoline and distillates that represent about one third of the total product volume, such as coke, sulfur, and lighter materials such as NGLs and crude olefins streams) and the cost of Renewable Identification Numbers (“RINs”).

Technology Segment

Overview

Our Technology segment develops and licenses chemical, polyolefin and other process technologies and provides associated engineering and other services. Our Technology segment also develops, manufactures and sells polyolefin catalysts. We market our process technologies and our polyolefin catalysts to external customers and also use them in our own manufacturing operations.

Our polyolefin process licenses are structured to provide a standard core technology, with individual customer needs met by adding customized modules that provide the required capabilities to produce the defined production grade slate and plant capacity. In addition to the basic license agreement, a range of services can also be provided, including project assistance; training; assistance in starting up the plant; and ongoing technical support after start-up. We may also offer marketing and sales services. In addition, licensees may continue to purchase polyolefin catalysts that are consumed in the production process, generally under long-term catalyst supply agreements with us.

Process Technology Licensing

We are a leading licensor of polyolefin process technologies. We also license a selective portfolio of chemical process technologies in the fields of olefin recovery, olefin conversion, aromatics extraction and acetyls.

Polyolefin Catalysts

We are a leading manufacturer and supplier of polyolefin catalysts. Approximately 25% of our catalyst sales are intercompany as we are a large polyolefin producer.

Research and Development

Our research and development (“R&D”) activities are designed to improve our existing products and processes, and discover and commercialize new materials, catalysts and processes. These activities focus on product and application development, process development, catalyst development and fundamental polyolefin focused research.

In 2015, 2014 and 2013, our research and development expenditures were \$102 million, \$127 million and \$150 million, respectively. A portion of these expenses are related to technical support and customer service and are allocated to the other business segments. In 2015, approximately 45% of all R&D costs were allocated to business segments, other than Technology, while in 2014 and 2013, the allocations approximated 35% and 30%, respectively.

GENERAL

Intellectual Property

We maintain an extensive patent portfolio and continue to file new patent applications in the U.S. and other countries. As of December 31, 2015, we owned approximately 5,200 patents and patent applications worldwide. Our patents and trade secrets cover our processes, products and catalysts and are significant to our competitive position, particularly with regard to PO, intermediate chemicals, petrochemicals, polymers and our process technologies. We own globally registered and unregistered trademarks including marks for “LyondellBasell,” “Lyondell” and “Equistar”. While we believe that our intellectual property provides competitive advantages, we do not regard our businesses as being materially dependent upon any single patent, trade secret or trademark. Some of our heritage production capacity operates under licenses from third parties.

Environmental

Most of our operations are affected by national, state, regional and local environmental laws. Matters pertaining to the environment are discussed in Part I, Item 1A. *Risk Factors*; Part I, Item 3. *Legal Proceedings*; Part II, Item 7. *Management’s Discussion and Analysis of Financial Condition and Results of Operations*; and Notes 2 and 19 to the Consolidated Financial Statements.

We have made, and intend to continue to make, the expenditures necessary for compliance with applicable laws and regulations relating to environmental, health and safety matters. We incurred capital expenditures of \$177 million in 2015 for health, safety and environmental compliance purposes and improvement programs, and estimate such expenditures to be approximately \$291 million in 2016 and \$408 million in 2017.

While capital expenditures or operating costs for environmental compliance, including compliance with potential legislation and potential regulation related to climate change, cannot be predicted with certainty, we do not believe they will have a material effect on our competitive position.

While there can be no assurance that physical risks to our facilities and supply chain due to climate change will not occur in the future, we have reviewed the potential for these risks and have concluded that, because of our facility locations and our existing distribution networks, we do not believe these risks are material in the near term.

Employee Relations

As of December 31, 2015, we employed approximately 13,000 full-time and part-time employees around the world. Of this total, 6,000 were located in North America and another 6,000 were located in Europe. The remainder of our employees are in other global locations.

As of December 31, 2015, approximately 820 of our employees in North America were represented by labor unions. The vast majority of our employees in Europe and South America are subject to staff council or works council coverage or collective bargaining agreements.

In addition to our own employees, we use the services of contractors in the routine conduct of our businesses.

EXECUTIVE OFFICERS OF THE REGISTRANT

Our executive officers as of February 15, 2016 were as follows:

<u>Name and Age</u>	<u>Significant Experience</u>
Bhavesh V. (“Bob”) Patel, 49	<p>Chief Executive Officer and Chairman of the Management Board since January 2015.</p> <p>Executive Vice President, Olefins and Polyolefins—EAI and Technology from October 2013 and member of the Management Board from April 2014 to January 2015.</p> <p>Senior Vice President, Olefins and Polyolefins—EAI and Technology from November 2010 to October 2013.</p> <p>Senior Vice President, Olefins and Polyolefins—Americas from March 2010 to June 2011.</p> <p>General Manager, Olefins and NGLs of Chevron Phillips Chemical Company from 2009 to 2010.</p>
Thomas Aebischer, 54	<p>Executive Vice President and Chief Financial Officer since January 2016.</p> <p>Chief Financial Officer of LaFargeHolcim from July 2015 to December 2015.</p> <p>Chief Financial Officer of Holcim Ltd. from January 2011 to June 2015.</p>
Kevin W. Brown, 58	<p>Executive Vice President, Manufacturing and Refining since January 2015 and member of the Management Board since May 2015.</p> <p>Senior Vice President, Refining from October 2009 to January 2015.</p> <p>Director of Sinclair Oil from January 2006 to September 2009.</p> <p>Executive Vice President, Operations of Sinclair Oil from June 2004 to September 2009.</p>
Dan M. Coombs, 59	<p>Executive Vice President, Global Olefins and Polyolefins, and Technology since January 2016.</p> <p>Executive Vice President, Intermediates and Derivatives from May 2015 to January 2016.</p> <p>Senior Vice President of Manufacturing for Chevron Phillips Chemical from December 2013 to May 2015.</p> <p>Senior Vice President for Specialties, Aromatics and Styrenics for Chevron Phillips Chemical from December 2011 to November 2013.</p> <p>Vice President of Corporate Planning and Development for Chevron Phillips Chemical from September 2011 to November 2011.</p> <p>Deputy General Manager for Qatar Chemical Company Limited Development and Vice President Qatar for Chevron Phillips Chemical from April 2010 to September 2011.</p>

<u>Name and Age</u>	<u>Significant Experience</u>
Jeffrey A Kaplan, 47	Executive Vice President and Chief Legal Officer since March 2015 and member of the Management Board since May 2015. Deputy General Counsel from December 2009 to March 2015.
Massimo Covezzi, 58	Senior Vice President, Research and Development since January 2008.
James Guilfoyle, 45	Senior Vice President, Global Intermediates and Derivatives since June 2015. Vice President of Global Propylene Oxide and Co-Products from March 2015 to May 2015. Director of Polymer Sales Americas from January 2012 to February 2015. Director of High Density Polyethylene from November 2006 to December 2011.
Michael VanDerSnick, 51	Senior Vice President, Health, Safety, Security and Environment since June 2015. Senior Vice President, Manufacturing–EAI from July 2012 to June 2015 2015. Site manager of the Company’s Channelview, Matagorda, Chocolate Bayou and Bayport, Texas plants from 2004 to 2012.
Sergey Vasnetsov, 52	Senior Vice President, Strategic Planning & Transactions since August 2010. Managing Director of Equity Research at Barclays Capital from 1999 to 2010.
Jacquelyn H. Wolf, 54	Senior Vice President and Chief Human Resources Officer since September 2012. Senior Vice President and Chief Human Resources Officer for Celanese, Inc. from December 2009 to July 2012. Executive Vice President and Chief Human Resources Officer for Comerica Bank from January 2006 to December 2009.

Description of Properties

Our principal manufacturing facilities as of December 31, 2015 are set forth below, and are identified by the principal segment or segments using the facility. All of the facilities are wholly owned, except as otherwise noted.

<u>Location</u>	<u>Segment</u>	<u>Principal Products</u>
Americas		
Bayport (Pasadena), Texas	I&D	EO, Ethylene Glycol and other EO derivatives
Bayport (Pasadena), Texas(1)	I&D	PO, PG, PGE, TBA and Isobutylene
Bayport (Pasadena), Texas	O&P—Americas	PP and <i>Catalloy</i> process resins
Channelview, Texas(2)	O&P—Americas	Ethylene, Propylene, Butadiene, Benzene, Toluene and Alkylate
Channelview, Texas(1)(2)(3)	I&D	Isopropyl Alcohol, PO, BDO, SM, Isobutylene, Methanol, ETBE and MTBE
Chocolate Bayou, Texas	O&P—Americas	PE (HDPE)
Clinton, Iowa	O&P—Americas	Ethylene and Propylene PE (LDPE and HDPE)
Corpus Christi, Texas	O&P—Americas	Ethylene and Propylene
Edison, New Jersey	Technology	Polyolefin Catalysts
Ensenada, Argentina	O&P—Americas	PP
	O&P—EAI	PP compounds
Houston, Texas	Refining	Gasoline, Diesel, Jet Fuel and Lube Oils
La Porte, Texas(4)	O&P—Americas	Ethylene and Propylene PE (LDPE and LLDPE)
La Porte, Texas(4)(5)	I&D	VAM, Acetic Acid and Methanol
Lake Charles, Louisiana	O&P—Americas	PP and <i>Catalloy</i> process resins
Matagorda, Texas	O&P—Americas	PE (HDPE)
Morris, Illinois	O&P—Americas	Ethylene, Propylene, and PE (LDPE and LLDPE)
Tuscola, Illinois	I&D	Ethanol
Victoria, Texas†	O&P—Americas	PE (HDPE)
Europe		
Berre l'Etang, France	O&P—EAI	Ethylene, Propylene, Butadiene, PP and PE (LDPE)
Botlek, Rotterdam, The Netherlands†	I&D	PO, PG, PGE, TBA, Isobutylene, BDO, MTBE and ETBE
Brindisi, Italy	O&P—EAI	PP
Carrington, UK	O&P—EAI	PP
Ferrara, Italy	O&P—EAI	PP and <i>Catalloy</i> process resins
	Technology	Polyolefin catalysts
Fos-sur-Mer, France†	I&D	PO, PG, TBA, MTBE and ETBE
Frankfurt, Germany†	O&P—EAI	PE (HDPE)
	Technology	Polyolefin catalysts

<u>Location</u>	<u>Segment</u>	<u>Principal Products</u>
Knapsack, Germany†	O&P—EAI	PP and PP compounds
Ludwigshafen, Germany†	Technology	Polyolefin catalysts
Maasvlakte, The Netherlands(6)	I&D	PO and SM
Moerdijk, The Netherlands†	O&P—EAI	<i>Catalloy</i> process resins and PB-1
Münchsmünster, Germany†	O&P—EAI	Ethylene, Propylene, PE (HDPE)
Tarragona, Spain(7)	O&P—EAI	PP and PP compounds
Wesseling, Germany	O&P—EAI	Ethylene, Propylene and Butadiene PP and PE (HDPE and LDPE)
Asia Pacific		
Geelong, Australia	O&P—EAI	PP

† The facility is located on leased land.

- (1) The Bayport PO/TBA plants and the Channelview PO/SM I plant are held by the U.S. PO joint venture between Covestro and Lyondell Chemical. These plants are located on land leased by the U.S. PO joint venture.
- (2) Equistar Chemicals, LP operates a styrene maleic anhydride unit and a polybutadiene unit, which are owned by an unrelated party and are located within the Channelview facility on property leased from Equistar Chemicals, LP.
- (3) Unrelated equity investors hold a minority interest in the PO/SM II plant at the Channelview facility.
- (4) The La Porte facilities are on contiguous property.
- (5) The La Porte methanol facility is owned by La Porte Methanol Company, a partnership owned 85% by us.
- (6) The Maasvlakte plant is owned by the European PO joint venture and is located on land leased by the European PO joint venture.
- (7) The Tarragona PP facility is located on leased land; the compounds facility is located on co-owned land.

Other Locations and Properties

We maintain executive offices in London, the United Kingdom, Rotterdam, The Netherlands and Houston, Texas. We maintain research facilities in Lansing, Michigan; Channelview, Texas; Cincinnati, Ohio; Ferrara, Italy and Frankfurt, Germany. Our Asia Pacific headquarters are in Hong Kong. We also have technical support centers in Bayreuth, Germany; Geelong, Australia; and Tarragona, Spain. We have various sales facilities worldwide.

Website Access to SEC Reports

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

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

Item 1A. Risk Factors.

You should carefully consider the following risk factors in addition to the other information included in this Annual Report on Form 10-K. Each of these risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our common stock.

Our business, including our results of operations and reputation, could be adversely affected by safety or product liability issues.

Failure to appropriately manage safety, human health, product liability and environmental risks associated with our products, product life cycles and production processes could adversely impact employees, communities, stakeholders, our reputation and our results of operations. Public perception of the risks associated with our products and production processes could impact product acceptance and influence the regulatory environment in which we operate. While we have procedures and controls to manage safety risks, issues could be created by events outside of our control, including natural disasters, severe weather events and acts of sabotage.

Our operations are subject to risks inherent in chemical and refining businesses, and we could be subject to liabilities for which we are not fully insured or that are not otherwise mitigated.

We maintain property, business interruption, product, general liability, casualty and other types of insurance that we believe are in accordance with customary industry practices. However, we are not fully insured against all potential hazards incident to our business, including losses resulting from natural disasters, wars or terrorist acts. Changes in insurance market conditions have caused, and may in the future cause, premiums and deductibles for certain insurance policies to increase substantially and, in some instances, for certain insurance to become unavailable or available only for reduced amounts of coverage. If we were to incur a significant liability for which we were not fully insured, we might not be able to finance the amount of the uninsured liability on terms acceptable to us or at all, and might be obligated to divert a significant portion of our cash flow from normal business operations.

Further, because a part of our business involves licensing polyolefin process technology, our licensees are exposed to similar risks involved in the manufacture and marketing of polyolefins. Hazardous incidents involving our licensees, if they do result or are perceived to result from use of our technologies, may harm our reputation, threaten our relationships with other licensees and/or lead to customer attrition and financial losses. Our policy of covering these risks through contractual limitations of liability and indemnities and through insurance may not always be effective. As a result, our financial condition and results of operation would be adversely affected, and other companies with competing technologies may have the opportunity to secure a competitive advantage.

Our ability to source raw materials may be adversely affected by political instability, civil disturbances or other governmental actions.

We obtain a substantial portion of our principal raw materials from sources in North Africa, the Middle East, Mexico and South America that may be less politically stable than other areas in which we conduct business, such as Europe or the U.S. Political instability, civil disturbances and actions by governments in these areas are likely to substantially increase the price and decrease the supply of raw materials necessary for our operations, which will have a material adverse effect on our results of operations.

Increased incidents of civil unrest, including terrorist attacks and demonstrations that have been marked by violence, have occurred in a number of countries in North Africa and the Middle East. Some political regimes in these countries are threatened or have changed as a result of such unrest. Political instability and civil unrest could continue to spread in the region and involve other areas. Such unrest, if it continues to spread or grow in intensity, could lead to civil wars, regional conflicts, or regime changes resulting in governments that are hostile to countries in which we conduct substantial business, such as in Europe, the U.S., or their respective allies.

A continued decrease in the price of crude oil may adversely impact the results of our operations, primarily in North America.

Energy costs generally follow price trends of crude oil and natural gas. These price trends may be highly volatile and cyclical. In the past, raw material and energy costs have experienced significant fluctuations that adversely affected our business segments' results of operations. For example, we have benefitted from the favorable ratio of U.S. natural gas prices to crude oil prices in recent years. This advantage was reduced as oil prices declined beginning in 2014. If the price of crude oil continues to decrease and it remains lower relative to U.S. natural gas prices or if the demand for natural gas and NGLs increases, this may have a negative impact on our results of operations.

Costs and limitations on supply of raw materials and energy may result in increased operating expenses.

The costs of raw materials and energy represent a substantial portion of our operating expenses. Due to the significant competition we face and the commodity nature of many of our products we are not always able to pass on raw material and energy cost increases to our customers. When we do have the ability to pass on the cost increases, we are not always able to do so quickly enough to avoid adverse impacts on our results of operations.

Cost increases for raw materials also may increase working capital needs, which could reduce our liquidity and cash flow. Even if we increase our sales prices to reflect rising raw material and energy costs, demand for products may decrease as customers reduce their consumption or use substitute products, which may have an adverse impact on our results of operations. In addition, producers in natural gas cost-advantaged regions, such as the Middle East and North America, benefit from the lower prices of natural gas and NGLs. Competition from producers in these regions may cause us to reduce exports from Europe and elsewhere. Any such reductions may increase competition for product sales within Europe and other markets, which can result in lower margins in those regions.

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

Additionally, there is growing concern over the reliability of water sources, including around the Texas Gulf Coast where several of our facilities are located. The decreased availability or less favorable pricing for water as a result of population growth, drought or regulation could negatively impact our operations.

If our raw material or utility supplies were disrupted, our businesses may incur increased costs to procure alternative supplies or incur excessive downtime, which would have a direct negative impact on plant operations. Disruptions of supplies may occur as a result of transportation issues including, but not limited to, as a result of natural disasters and water levels that can affect the operations of vessels, barges, rails, trucks and pipeline traffic. These risks are particularly prevalent in the U.S. Gulf Coast area. Additionally, the export of NGLs from the U.S., greater restrictions on hydraulic fracturing or the lifting by the U.S. government of the ban on U.S. crude oil exports could restrict the availability of our raw materials, thereby increasing our costs.

With increased volatility in raw material costs, our suppliers could impose more onerous terms on us, resulting in shorter payment cycles and increasing our working capital requirements.

Economic disruptions and downturns in general, and particularly continued global economic uncertainty or economic turmoil in emerging markets, could have a material adverse effect on our business, prospects, operating results, financial condition and cash flows.

Our results of operations can be materially affected by adverse conditions in the financial markets and depressed economic conditions generally. Economic downturns in the businesses and geographic areas in which we sell our products substantially reduce demand for our products and result in decreased sales volumes and increased credit risk. Recessionary environments adversely affect our business because demand for our products is reduced, particularly from our customers in industrial markets generally and the automotive and housing industries specifically, and may result in higher costs of capital. A significant portion of our revenues and earnings are derived from our business in Europe, including southern Europe. In addition, most of our European transactions and assets, including cash reserves and receivables, are denominated in euros.

Europe's recovery from the economic crisis has continued to be uneven, slow and modest. If the crisis re-emerges or meaningful recovery does not materialize across Europe, there will likely be a continued negative effect on our European business, as well as the businesses of our European customers, suppliers and partners. In addition, if such a crisis re-emerges and leads to a further significant devaluation of the euro, the value of our financial assets that are denominated in euros would be significantly reduced when translated to U.S. dollars for financial reporting purposes. We also derive significant revenues from our business in emerging markets, particularly the emerging markets in Asia and Brazil. Any broad-based downturn in these emerging markets, or in a key market such as China, could require us to reduce export volumes into these markets and could also require us to divert product sales to less profitable markets. Any of these conditions could ultimately harm our overall business, prospects, operating results, financial condition and cash flows.

The cyclical and volatility of the industries in which we participate may cause significant fluctuations in our operating results.

Our business operations are subject to the cyclical and volatile nature of the supply-demand balance in the chemical and refining industries. Our future operating results are expected to continue to be affected by this cyclical and volatility. The chemical and refining industries historically have experienced alternating periods of capacity shortages, causing prices and profit margins to increase, followed by periods of excess capacity, resulting in oversupply, declining capacity utilization rates and declining prices and profit margins.

In addition to changes in the supply and demand for products, changes in energy prices and other worldwide economic conditions can cause volatility. These factors result in significant fluctuations in profits and cash flow from period to period and over business cycles.

New capacity additions in Asia, the Middle East and North America may lead to periods of oversupply and lower profitability. A sizable number of expansions have been announced in North America. The timing and extent of any changes to currently prevailing market conditions are uncertain and supply and demand may be unbalanced at any time. As a consequence, we are unable to accurately predict the extent or duration of future industry cycles or their effect on our business, financial condition or results of operations.

We sell products in highly competitive global markets and face significant price pressures.

We sell our products in highly competitive global markets. Due to the commodity nature of many of our products, competition in these markets is based primarily on price and, to a lesser extent, on product performance, product quality, product deliverability, reliability of supply and customer service. Generally, we are not able to protect our market position for these products by product differentiation and may not be able to pass on cost increases to our customers due to the significant competition in our business.

In addition, we face increased competition from companies that may have greater financial resources and different cost structures or strategic goals than us. These include large integrated oil companies (some of which

also have chemical businesses), government-owned businesses, and companies that receive subsidies or other government incentives to produce certain products in a specified geographic region. Continuing, increased competition from these companies, especially in our olefin and refining businesses, could limit our ability to increase product sales prices in response to raw material and other cost increases, or could cause us to reduce product sales prices to compete effectively, which could reduce our profitability. Competitors that have greater financial resources than us may be able to invest significant capital into their businesses, including expenditures for research and development.

In addition, specialty products we produce may become commoditized over time. Increased competition could result in lower prices or lower sales volumes, which would have a negative impact on our results of operations.

Interruptions of operations at our facilities may result in liabilities or lower operating results.

We own and operate large-scale facilities. Our operating results are dependent on the continued operation of our various production facilities and the ability to complete construction and maintenance projects on schedule. Interruptions at our facilities may materially reduce the productivity and profitability of a particular manufacturing facility, or our business as a whole, during and after the period of such operational difficulties. In the past, we had to shut down plants on the U.S. Gulf Coast, including the temporary shutdown of our Houston refinery, as a result of hurricanes striking the Texas coast.

In addition, because the Houston refinery is our only refining operation, an outage at the refinery could have a particularly negative impact on our operating results. Unlike our chemical and polymer production facilities, which may have sufficient excess capacity to mitigate the negative impact of lost production at other facilities, we do not have the ability to increase refining production elsewhere in the U.S.

Although we take precautions to enhance the safety of our operations and minimize the risk of disruptions, our operations are subject to hazards inherent in chemical manufacturing and refining and the related storage and transportation of raw materials, products and wastes. These potential hazards include:

- pipeline leaks and ruptures;
- explosions;
- fires;
- severe weather and natural disasters;
- mechanical failure;
- unscheduled downtimes;
- supplier disruptions;
- labor shortages or other labor difficulties;
- transportation interruptions;
- remediation complications;
- increased restrictions on, or the unavailability of, water for use at our manufacturing sites or for the transport of our products or raw materials;
- chemical and oil spills;
- discharges or releases of toxic or hazardous substances or gases;
- shipment of incorrect or off-specification product to customers;

- storage tank leaks;
- other environmental risks; and
- terrorist acts.

Some of these hazards may cause severe damage to or destruction of property and equipment or personal injury and loss of life and may result in suspension of operations or the shutdown of affected facilities.

Large capital projects can take many years to complete, and market conditions could deteriorate significantly between the project approval date and the project startup date, negatively impacting project returns. If we are unable to complete capital projects at their expected costs and in a timely manner, or if the market conditions assumed in our project economics deteriorate, our business, financial condition, results of operations and cash flows could be materially and adversely affected.

Delays or cost increases related to capital spending programs involving engineering, procurement and construction of facilities could materially adversely affect our ability to achieve forecasted internal rates of return and operating results. Delays in making required changes or upgrades to our facilities could subject us to fines or penalties as well as affect our ability to supply certain products we produce. Such delays or cost increases may arise as a result of unpredictable factors, many of which are beyond our control, including:

- denial of or delay in receiving requisite regulatory approvals and/or permits;
- unplanned increases in the cost of construction materials or labor;
- disruptions in transportation of components or construction materials;
- adverse weather conditions, natural disasters or other events (such as equipment malfunctions, explosions, fires or spills) affecting our facilities, or those of vendors or suppliers;
- shortages of sufficiently skilled labor, or labor disagreements resulting in unplanned work stoppages;
- nonperformance by, or disputes with, vendors, suppliers, contractors or subcontractors.

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

Increased IT security threats and more sophisticated and targeted computer crime could pose a risk to our systems, networks, products, facilities and services.

Increased global information security threats and more sophisticated, targeted computer crime pose a risk to the confidentiality, availability and integrity of our data, operations and infrastructure. While we attempt to mitigate these risks by employing a number of measures, including employee training, comprehensive monitoring of our networks and systems, and maintenance of backup and protective systems, our employees, systems, networks, products, facilities and services remain potentially vulnerable to sophisticated espionage or continual cyber-assault. Depending on their nature and scope, such threats could potentially lead to the compromise of confidential information, improper use of our systems and networks, manipulation and destruction of data, defective products, production downtimes and operational disruptions, which in turn could adversely affect our reputation, competitiveness and results of operations.

We operate internationally and are subject to exchange rate fluctuations, exchange controls, political risks and other risks relating to international operations.

We operate internationally and are subject to the risks of doing business on a global level. These risks include fluctuations in currency exchange rates, economic instability and disruptions, restrictions on the transfer

of funds and the imposition of duties and tariffs. Additional risks from our multinational business include transportation delays and interruptions, war, terrorist activities, epidemics, pandemics, political instability, import and export controls, changes in governmental policies, labor unrest and current and changing regulatory environments.

We generate revenues from export sales and operations that may be denominated in currencies other than the relevant functional currency. Exchange rates between these currencies and functional currencies in recent years have fluctuated significantly and may do so in the future. It is possible that fluctuations in exchange rates will result in reduced operating results. Additionally, we operate with the objective of having our worldwide cash available in the locations where it is needed, including the United Kingdom for our parent company's significant cash obligations as a result of dividend and interest payments. It is possible that we may not always be able to provide cash to other jurisdictions when needed or that such transfers of cash could be subject to additional taxes, including withholding taxes.

Our operating results could be negatively affected by the global laws, rules and regulations, as well as political environments, in the jurisdictions in which we operate. There could be reduced demand for our products, decreases in the prices at which we can sell our products and disruptions of production or other operations. Additionally, there may be substantial capital and other costs to comply with regulations and/or increased security costs or insurance premiums, any of which could reduce our operating results.

We obtain a substantial portion of our principal raw materials from international sources that are subject to these same risks. Our compliance with applicable customs, currency exchange control regulations, transfer pricing regulations or any other laws or regulations to which we may be subject could be challenged. Furthermore, these laws may be modified, the result of which may be to prevent or limit subsidiaries from transferring cash to us.

Furthermore, we are subject to certain existing, and may be subject to possible future, laws that limit or may limit our activities while some of our competitors may not be subject to such laws, which may adversely affect our competitiveness.

Changes in tax laws and regulations could affect our tax rate and our results of operations.

We are a tax resident in the United Kingdom and are subject to the United Kingdom corporate income tax system. LyondellBasell N.V. has little or no taxable income of its own because, as a holding company, it does not conduct any operations. Through our subsidiaries, we have substantial operations world-wide. Taxes are primarily paid on the earnings generated in various jurisdictions, including the United States, The Netherlands, Germany, France, and Italy. We monitor income tax legislative developments in countries where we conduct business, including the United Kingdom. Recently, there has been an increase in attention, both in the U.K. and globally to the tax practices of multinational companies, including proposals by the Organization for Economic Cooperation and Development ("OECD") with respect to base erosion and profit shifting. Such attention may result in legislative changes that could affect our tax rate. Management does not believe that recent changes in income tax laws will have a material impact on our Consolidated Financial Statements, although new or proposed changes to tax laws could affect our tax liabilities in the future.

Failure to comply with the Foreign Corrupt Practices Act and similar worldwide anti-bribery laws may have an adverse effect on us.

Our international operations require us to comply with a number of U.S. and international laws and regulations, including those involving anti-bribery and anti-corruption. In order to effectively operate in certain foreign jurisdictions, circumstances may require that we establish joint ventures with local operators or find strategic partners. As an issuer with securities listed on a United States stock exchange, we are subject to the regulations imposed by the Foreign Corrupt Practices Act ("FCPA"), which generally prohibits issuers and their

intermediaries (including strategic or local partners or agents, even if those partners or agents are not themselves subject to the FCPA or other similar laws) from making improper payments to foreign officials for the purpose of obtaining or keeping business or obtaining an improper business benefit. We have an ongoing program to promote compliance with the FCPA and other similar anti-bribery and anti-corruption laws. Any determination that we have violated the FCPA or other similar laws could have a material effect on our business, results of operations, and cash flows.

Many of our businesses depend on our intellectual property. Our future success will depend in part on our ability to protect our intellectual property rights, and our inability to do so could reduce our ability to maintain our competitiveness and margins.

We have a significant worldwide patent portfolio of issued and pending patents. These patents and patent applications, together with proprietary technical know-how, are significant to our competitive position, particularly with regard to PO, performance chemicals, petrochemicals, and polymers, including process technologies such as *Spheripol*, *Spherizone*, *Hostalen*, *Spherilene*, *Lupotech T* and *Avant* catalyst family technology rights. We rely on the patent, copyright and trade secret laws of the countries in which we operate to protect our investment in research and development, manufacturing and marketing. However, we may be unable to prevent third parties from using our intellectual property without authorization. Proceedings to protect these rights could be costly, and we may not prevail.

The protection afforded by patents varies from country to country and depends upon the type of patent and its scope of coverage. While a presumption of validity may exist with respect to patents issued to us, our patents may be challenged, invalidated, circumvented or rendered unenforceable. As patents expire, the products and processes described and claimed under those patents become generally available for use by competitors.

Our continued growth strategy may bring us to regions of the world where intellectual property protection may be limited and difficult to enforce. In addition, patent rights may not prevent our competitors from developing, using or selling products that are similar or functionally equivalent to our products. Moreover, our competitors or other third parties may obtain patents that restrict or preclude our ability to lawfully produce or sell our products in a competitive manner, which could result in significantly lower revenues, reduced profit margins or loss of market share.

We also rely upon unpatented proprietary know-how and continuing technological innovation and other trade secrets to develop and maintain our competitive position. While it is our policy to enter into confidentiality agreements with our employees and third parties to protect our intellectual property, these confidentiality agreements may be breached, may not always be executed, may not provide meaningful protection or adequate remedies may not be available. Additionally, others could obtain knowledge of our trade secrets through independent development or other access by legal or illegal means.

The failure of our patents or confidentiality agreements to protect our processes, apparatuses, technology, trade secrets or proprietary know-how could result in significantly lower revenues, reduced profit margins and cash flows and/or loss of market share. We also may be subject to claims that our technology, patents or other intellectual property infringes on a third party's intellectual property rights. Unfavorable resolution of these claims could result in restrictions on our ability to deliver the related service or in a settlement that could be material to us.

Shared control or lack of control of joint ventures may delay decisions or actions regarding the joint ventures.

A portion of our operations are conducted through joint ventures, where control may be exercised by or shared with unaffiliated third parties. We cannot control the actions of our joint venture partners, including any nonperformance, default or bankruptcy of joint venture partners. The joint ventures that we do not control may also lack adequate internal controls systems or financial reporting systems to provide adequate and timely information for our reporting purposes.

In the event that any of our joint venture partners do not observe their obligations, it is possible that the affected joint venture would not be able to operate in accordance with our business plans. As a result, we could be required to increase our level of commitment in order to give effect to such plans. Differences in views among the joint venture participants also may result in delayed decisions or in failures to agree on major matters, potentially adversely affecting the business and operations of the joint ventures and in turn our business and operations.

We cannot predict with certainty the extent of future costs under environmental, health and safety and other laws and regulations, and cannot guarantee they will not be material.

We may face liability arising out of the normal course of business, including alleged personal injury or property damage due to exposure to chemicals or other hazardous substances at our current or former facilities or chemicals that we manufacture, handle or own. In addition, because our products are components of a variety of other end-use products, we, along with other members of the chemical industry, are subject to potential claims related to those end-use products. Any substantial increase in the success of these types of claims could negatively affect our operating results.

We (together with the industries in which we operate) are subject to extensive national, regional, state and local environmental laws, regulations, directives, rules and ordinances concerning:

- emissions to the air;
- discharges onto land or surface waters or into groundwater; and
- the generation, handling, storage, transportation, treatment, disposal and remediation of hazardous substances and waste materials.

Many of these laws and regulations provide for substantial fines and potential criminal sanctions for violations. Some of these laws and regulations are subject to varying and conflicting interpretations. In addition, some of these laws and regulations require us to meet specific financial responsibility requirements. Any substantial liability for environmental damage could have a material adverse effect on our financial condition, results of operations and cash flows.

Although we have compliance programs and other processes intended to ensure compliance with all such regulations, we are subject to the risk that our compliance with such regulations could be challenged. Non-compliance with certain of these regulations could result in the incurrence of additional costs, penalties or assessments that could be material.

Our industry is subject to extensive government regulation, and existing, or future regulations may restrict our operations, increase our costs of operations or require us to make additional capital expenditures.

Compliance with regulatory requirements could result in higher operating costs, such as regulatory requirements relating to emissions, the security of our facilities, and the transportation, export or registration of our products. We generally expect that regulatory controls worldwide will become increasingly more demanding, but cannot accurately predict future developments.

Increasingly strict environmental laws and inspection and enforcement policies, could affect the handling, manufacture, use, emission or disposal of products, other materials or hazardous and non-hazardous waste. Stricter environmental, safety and health laws, regulations and enforcement policies could result in increased operating costs or capital expenditures to comply with such laws and regulations. Additionally, we are required to have permits for our businesses and are subject to licensing regulations. These permits and licenses are subject to renewal, modification and in some circumstances, revocation. Further, the permits and licenses are often difficult, time consuming and costly to obtain and could contain conditions that limit our operations.

We may incur substantial costs to comply with climate change legislation and regulatory initiatives.

There has been a broad range of proposed or promulgated state, national and international laws focusing on greenhouse gas (“GHG”) reduction. These proposed or promulgated laws apply or could apply in countries where we have interests or may have interests in the future. Laws in this field continue to evolve and, while they are likely to be increasingly widespread and stringent, at this stage it is not possible to accurately estimate either a timetable for implementation or our future compliance costs relating to implementation. Within the framework of the EU emissions trading scheme (“ETS”), we were allocated certain allowances of carbon dioxide for the affected plants of our European sites for the period from 2008 to 2012 (“ETS II period”). The ETS II period did not bring additional cost to us as the allowance allocation was sufficient to cover the actual emissions of the affected plants. We were able to build an allowance surplus during the ETS II period which has been banked to the scheme for the period from 2013 to 2020 (“ETS III period”). We expect to incur additional costs for the ETS III period, despite the allowance surplus accrued over the ETS II period, as allowance allocations have been reduced for the ETS III period and more of our plants are affected by the scheme. We maintain an active hedging strategy to cover these additional costs. We expect to incur additional costs in relation to future carbon or GHG emission trading schemes.

In the U.S., the Environmental Protection Agency (the “EPA”) has promulgated federal GHG regulations under the Clean Air Act affecting certain sources. The EPA has issued mandatory GHG reporting requirements, requirements to obtain GHG permits for certain industrial plants and proposals for GHG performance standards for some facilities. The recent EPA action could be a precursor to further federal regulation of carbon dioxide emissions and other greenhouse gases, and may affect the outcome of other climate change lawsuits pending in U.S. courts in a manner unfavorable to our industry. In any event, additional regulation may be forthcoming at the U.S. federal or state level with respect to GHG emissions, and such regulation could result in the creation of additional costs in the form of taxes or required acquisition or trading of emission allowances.

Compliance with these or other changes in laws, regulations and obligations that create a GHG emissions trading scheme or GHG reduction policies generally could significantly increase our costs or reduce demand for products we produce. Additionally, compliance with these regulations may result in increased permitting necessary for the operation of our business or for any of our growth plans. Difficulties in obtaining such permits could have an adverse effect on our future growth. Therefore, any future potential regulations and legislation could result in increased compliance costs, additional operating restrictions or delays in implementing growth projects or other capital investments, and could have a material adverse effect on our business and results of operations.

We may be required to record material charges against our earnings due to any number of events that could cause impairments to our assets.

We may be required to reduce production at or idle facilities for extended periods of time or exit certain businesses as a result of the cyclical nature of our industry. Specifically, oversupplies of or lack of demand for particular products or high raw material prices may cause us to reduce production. We may choose to reduce production at certain facilities because we have off-take arrangements at other facilities, which make any reductions or idling unavailable at those facilities. Any decision to permanently close facilities or exit a business likely would result in impairment and other charges to earnings.

Temporary outages at our facilities can last for several quarters and sometimes longer. These outages could cause us to incur significant costs, including the expenses of maintaining and restarting these facilities. In addition, even though we may reduce production at facilities, we may be required to continue to purchase or pay for utilities or raw materials under take-or-pay supply agreements.

Our business is capital intensive and we rely on cash generated from operations and external financing to fund our growth and ongoing capital needs. Limitations on access to external financing could adversely affect our operating results.

We require significant capital to operate our current business and fund our growth strategy. Moreover, interest payments, dividends and the expansion of our business or other business opportunities may require significant amounts of capital. We believe that our cash from operations currently will be sufficient to meet these needs. However, if we need external financing, our access to credit markets and pricing of our capital is dependent upon maintaining sufficient credit ratings from credit rating agencies and the state of the capital markets generally. There can be no assurances that we would be able to incur indebtedness on terms we deem acceptable, and it is possible that the cost of any financings could increase significantly, thereby increasing our expenses and decreasing our net income. If we are unable to generate sufficient cash flow or raise adequate external financing, including as a result of significant disruptions in the global credit markets, we could be forced to restrict our operations and growth opportunities, which could adversely affect our operating results.

We may use our five-year, \$2 billion revolving credit facility, which backs our commercial paper program, to meet our cash needs, to the extent available. As of December 31, 2015, we had no borrowings or letters of credit outstanding under the facility and \$323 million outstanding under our commercial paper program, leaving an unused and available credit capacity of \$1,631 million. We may also meet our cash needs by selling receivables under our \$900 million U.S. accounts receivable securitization facility or our €450 million European accounts receivable securitization facility. In the event of a default under our credit facility or any of our senior notes, we could be required to immediately repay all outstanding borrowings and make cash deposits as collateral for all obligations the facility supports, which we may not be able to do. Any default under any of our credit arrangements could cause a default under many of our other credit agreements and debt instruments. Without waivers from lenders party to those agreements, any such default could have a material adverse effect on our ability to continue to operate.

Legislation and regulatory initiatives could lead to a decrease in demand for our products.

New or revised governmental regulations and independent studies relating to the effect of our products on health, safety and the environment may affect demand for our products and the cost of producing our products. Initiatives by governments and private interest groups will potentially require increased toxicological testing and risk assessments of a wide variety of chemicals, including chemicals used or produced by us. For example, in the United States, the National Toxicology Program (“NTP”) is a federal interagency program that seeks to identify and select for study chemicals and other substances to evaluate potential human health hazards. In the European Union, the Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (“REACH”) is a regulation designed to identify the intrinsic properties of chemical substances, assess hazards and risks of the substances, and identify and implement the risk management measures to protect humans and the environment.

Assessments under NTP, REACH or similar programs or regulations in other jurisdictions may result in heightened concerns about the chemicals we use or produce and may result in additional requirements being placed on the production, handling, labeling or use of those chemicals. Such concerns and additional requirements could also increase the cost incurred by our customers to use our chemical products and otherwise limit the use of these products, which could lead to a decrease in demand for these products. Such a decrease in demand could have an adverse impact on our business and results of operations.

Adverse results of legal proceedings could materially adversely affect us.

We are subject to and may in the future be subject to a variety of legal proceedings and claims that arise out of the ordinary conduct of our business. Results of legal proceedings cannot be predicted with certainty. Irrespective of its merits, litigation may be both lengthy and disruptive to our operations and may cause significant expenditure and diversion of management attention. We may be faced with significant monetary

damages or injunctive relief against us that could materially adversely affect a portion of our business operations or materially and adversely affect our financial position and our results of operations should we fail to prevail in certain matters.

Significant changes in pension fund investment performance or assumptions relating to pension costs may adversely affect the valuation of pension obligations, the funded status of pension plans, and our pension cost.

Our pension cost is materially affected by the discount rate used to measure pension obligations, the level of plan assets available to fund those obligations at the measurement date and the expected long-term rate of return on plan assets. Significant changes in investment performance or a change in the portfolio mix of invested assets may result in corresponding increases and decreases in the value of plan assets, particularly equity securities, or in a change of the expected rate of return on plan assets. Any change in key actuarial assumptions, such as the discount rate, would impact the valuation of pension obligations, affecting the reported funded status of our pension plans as well as the net periodic pension cost in the following fiscal years.

Certain of our current pension plans could have projected benefit obligations that exceed the fair value of the plan assets. As of December 31, 2015, the aggregate deficit was \$871 million. Any declines in the fair values of the pension plans assets could require additional payments by us in order to maintain specified funding levels.

Our pension plans are subject to legislative and regulatory requirements of applicable jurisdictions, which could include, under certain circumstances, local governmental authority to terminate the plan.

Item 1B. Unresolved Staff Comments.

None.

Item 3. Legal Proceedings.

Environmental Matters

From time to time we and our joint ventures receive notices or inquiries from government entities regarding alleged violations of environmental laws and regulations pertaining to, among other things, the disposal, emission and storage of chemical and petroleum substances, including hazardous wastes. Item 103 of the SEC's Regulation S-K requires disclosure of certain environmental matters when a governmental authority is a party to the proceedings and the proceedings involve potential monetary sanctions that we reasonably believe could exceed \$100,000. The matters below are disclosed solely pursuant to that requirement.

In September 2013, the Louisiana Department of Environmental Quality (the "LDEQ") issued a Compliance Order and Notice of Potential Penalty to Equistar Chemicals, LP pertaining to self-reported deviations arising from our Lake Charles, Louisiana polyolefins plant and relating to certain Clean Air Act Title V permit conditions, limits and other requirements. The matter involves deviations reported by us to the LDEQ in semi-annual reports covering 2007 through June 2011. We reasonably believe that LDEQ may assert an administrative penalty demand in this matter in excess of \$100,000.

In September 2013, EPA Region V issued a Notice and Finding of Violation alleging violations at our Morris, Illinois facility related to flaring activity. The Notice generally alleges failures to monitor steam usage and improper flare operations. We reasonably believe that EPA Region V may assert a penalty demand in excess of \$100,000.

In June 2014, EPA Region V issued a Notice and Finding of Violation alleging violations at our Tuscola, Illinois facility related to flaring activity. The Notice generally alleges failure to conduct a valid performance test and improper flare operations. We reasonably believe that EPA Region V may assert a penalty demand in excess of \$100,000.

In July 2015, the Texas Commission on Environmental Quality (“TCEQ”) issued a proposed Agreed Order to Houston Refining LP pertaining to a Clean Air Act Title V air permit inspection covering the years 2013 and 2014. TCEQ has asserted an administrative penalty demand for this matter of \$118,127 and we are currently awaiting the approval of the Agreed Order by the TCEQ Commissioners.

Also in July 2015, the TCEQ issued a proposed Agreed Order to Houston Refining LP pertaining to an emissions event which occurred in August 2014. TCEQ has asserted an administrative penalty demand for this matter of \$100,000, which was approved by the Commissioners in January 2016.

Litigation and Other Matters

Information regarding our litigation and other legal proceedings can be found in Note 19, *Commitments and Contingencies*, to the Consolidated Financial Statements.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market and Dividend Information

Our shares were listed on the New York Stock Exchange ("NYSE") on October 14, 2010 under the symbol "LYB." The high and low sales prices for our ordinary shares and the cash dividends per share declared for the two most recent fiscal years are shown in the table below.

	<u>High</u>	<u>Low</u>	<u>Cash Dividends Declared</u>
2015			
First Quarter	\$ 91.99	\$71.74	\$0.70
Second Quarter	107.32	87.03	0.78
Third Quarter	104.66	72.76	0.78
Fourth Quarter	98.25	83.22	0.78
2014			
First Quarter	\$ 91.94	\$74.37	\$0.60
Second Quarter	102.63	85.40	0.70
Third Quarter	115.40	97.09	0.70
Fourth Quarter	107.79	70.06	0.70

The payment of dividends or distributions in the future will be subject to the requirements of Dutch law and the discretion of our Management Board and our Supervisory Board. The declaration of any future cash dividends and, if declared, the amount of any such dividends, will depend upon general business conditions, our financial condition, our earnings and cash flow, our capital requirements, financial covenants and other contractual restrictions on the payment of dividends or distributions.

There can be no assurance that any dividends or distributions will be declared or paid in the future.

Holders

As of February 11, 2016, there were approximately 5,800 record holders of our shares, including Cede & Co. as nominee of the Depository Trust Company.

United Kingdom Tax Considerations

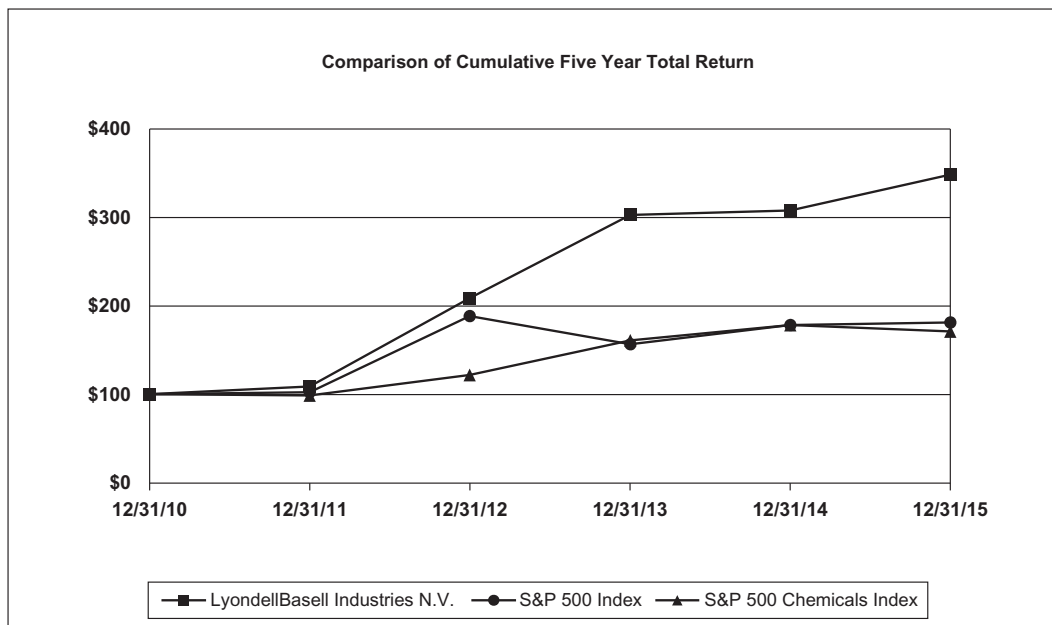
In May 2013, we announced the planned migration of the tax domicile of LyondellBasell Industries N.V. from The Netherlands, where LyondellBasell Industries N.V. is incorporated, to the United Kingdom. On August 28, 2013, the Dutch and the United Kingdom competent authorities completed a mutual agreement procedure and issued a ruling that retroactively as of July 1, 2013 LyondellBasell Industries N.V. should be treated solely as a tax resident in the United Kingdom and is subject to the United Kingdom corporate income tax system.

As a result of its United Kingdom tax residency, dividend distributions by LyondellBasell Industries N.V. to its shareholders are not subject to withholding tax, as the United Kingdom currently does not levy a withholding tax on dividend distributions.

Performance Graph

The performance graph and the information contained in this section is not “soliciting material”, is being furnished, not filed, with the SEC and is not to be incorporated by reference into any of our filings under the Securities Act or the Exchange Act whether made before or after the date hereof and irrespective of any general incorporation language contained in such filing.

The graph below shows the relative investment performance of LyondellBasell Industries N.V. shares, the S&P 500 Index and the S&P 500 Chemicals Index since December 31, 2010. The graph assumes that \$100 was invested on December 31, 2010 and any dividends paid were reinvested at the date of payment. The graph is presented pursuant to SEC rules and is not meant to be an indication of our future performance.



	<u>12/31/2010</u>	<u>12/31/2011</u>	<u>12/31/2012</u>	<u>12/31/2013</u>	<u>12/31/2014</u>	<u>12/31/2015</u>
LyondellBasell Industries N.V.	\$100	\$109.05	\$208.70	\$302.06	\$307.58	\$347.97
S&P 500 Index	\$100	\$102.11	\$188.45	\$156.82	\$178.29	\$180.75
S&P 500 Chemicals Index	\$100	\$ 98.74	\$122.05	\$160.87	\$178.09	\$170.65

Issuer Purchases of Equity Securities

<u>2015 Period</u>	<u>Total Number of Shares Purchased</u>	<u>Average Price Paid per Share</u>	<u>Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs</u>	<u>Maximum Number of Shares That May Yet Be Purchased Under the Plans or Programs</u>
October 1 – October 31	5,166,910	\$92.30	5,166,910	22,869,056
November 1 – November 30	3,820,849	\$94.20	3,820,849	19,048,207
December 1 – December 31	<u>3,745,500</u>	\$89.20	<u>3,745,500</u>	15,302,707
Total	<u><u>12,733,259</u></u>	\$91.96	<u><u>12,733,259</u></u>	15,302,707

On May 6, 2015, we announced a share repurchase program of up to 47,250,519 of our ordinary shares through November 6, 2016. The maximum number of shares that may yet be purchased is not necessarily an indication of the number of shares that will ultimately be purchased.

Item 6. Selected Financial Data.

The following selected financial data was derived from LyondellBasell's consolidated financial statements, which were prepared from its books and records. This data should be read in conjunction with the Consolidated Financial Statements and related notes thereto and "Management's Discussion and Analysis of Financial Condition and Results of Operations," below. Management's Discussion and Analysis of Financial Condition and Results of Operations includes a discussion of factors that will enhance an understanding of this data.

In millions of dollars, except per share data	Year Ended December 31,				
	2015	2014	2013	2012	2011
Results of operations data:					
Sales and other operating revenues	\$32,735	\$45,608	\$44,062	\$45,352	\$48,183
Operating income(a)	6,122	5,736	5,102	4,676	4,337
Interest expense(b)	(310)	(352)	(309)	(655)	(1,044)
Income from equity investments	339	257	203	143	216
Income from continuing operations(a)(c)	4,479	4,172	3,860	2,858	2,472
Earnings per share from continuing operations:					
Basic	9.63	8.04	6.81	5.01	4.34
Diluted	9.60	8.00	6.76	4.96	4.32
Loss from discontinued operations, net of tax	(5)	(4)	(7)	(24)	(332)
Loss per share from discontinued operations:					
Basic	(0.01)	(0.01)	(0.01)	(0.04)	(0.58)
Diluted	(0.01)	(0.01)	(0.01)	(0.04)	(0.58)
Balance sheet data:					
Total assets	22,757	24,221	27,230	24,167	22,803
Short-term debt	353	346	58	95	48
Long-term debt(d)	7,675	6,699	5,709	4,252	3,948
Cash and cash equivalents	924	1,031	4,450	2,732	1,065
Short-term investments	1,064	1,593	—	—	—
Accounts receivable	2,517	3,448	4,030	3,904	3,778
Inventories	4,051	4,517	5,279	5,075	5,499
Working capital	4,386	4,901	5,737	5,694	5,863
Cash flow data:					
Cash provided by (used in):					
Operating activities	5,842	6,048	4,835	4,787	2,860
Investing activities	(1,051)	(3,531)	(1,602)	(1,013)	(1,021)
Expenditures for property, plant and equipment	(1,440)	(1,499)	(1,561)	(1,060)	(1,050)
Financing activities	(4,850)	(5,907)	(1,589)	(2,145)	(4,955)
Dividends declared per share	3.04	2.70	2.00	4.20	5.05

- (a) Includes pretax, non-cash charges in 2015 and 2014 of \$548 million (\$351 million after tax) and \$760 million (\$483 million, after tax), respectively, related to lower of cost or market ("LCM") inventory valuation adjustments. These LCM inventory valuation adjustments were primarily associated with a decline in the price of crude oil and a related decline in the prices of heavy liquids and other correlated products.
- (b) Interest expense in 2012 included charges of \$294 million for premiums related to the refinancing of notes bearing interest rates of 8% and 11% per annum with lower coupon notes. In 2011, interest expense included \$443 million of prepayment premiums and unamortized debt issuance cost write-offs.
- (c) Income from continuing operations for the year ended December 31, 2013 included a \$353 million benefit related to the release of valuation allowances primarily associated with tax losses in our French group. For the years ended December 31, 2012 and 2011, income from continuing operations included after-tax charges of \$210 million and \$279 million, respectively, for premiums and charges on the early repayment of debt.
- (d) Includes current maturities of long-term debt.

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

GENERAL

This discussion should be read in conjunction with the information contained in our Consolidated Financial Statements, and the accompanying notes elsewhere in this report. When we use the terms “we,” “us,” “our” or similar words in this discussion, unless the context otherwise requires, we are referring to LyondellBasell Industries N.V. and its consolidated subsidiaries.

References to industry benchmark prices or costs, including the weighted average cost of ethylene production, are generally to industry prices and costs from third-party consulting data. References to industry benchmarks for refining and oxyfuels market margins are to industry prices reported by Platts, a reporting service of The McGraw-Hill Companies. References to industry benchmark prices for crude oil and natural gas are to Bloomberg.

OVERVIEW

Our performance is driven by, among other things, global economic conditions generally and their impact on demand for our products, raw material and energy prices, as well as industry-specific issues, such as production capacity. Our businesses are generally subject to the cyclical and volatility seen in the chemicals and refining industries.

During 2015, we generated record earnings. Our performance remained focused and steady despite the challenging environment of declining crude oil and natural gas prices. The impact of lower oil prices, which reduced the U.S. cost advantage for olefins and TBA products, was offset by stronger polyolefins results in the U.S. and Europe and in other businesses, such as styrene. Lower prices for crude oil and correlated products also led to significant lower of cost or market inventory valuation charges during the year. We believe our performance indicates our capability to deliver strong results under a wide range of operating environments. During 2015, we continued to execute and expand our strategic growth program with expansions of our ethylene and PP compounds capacities. We also moved forward additional growth projects during the year.

Significant items that affected 2015 results include:

- Lower of cost or market (“LCM”) inventory valuation charges affecting all but the Technology segment in 2015 totaling \$548 million, pretax (\$351 million, after tax);
- Improved Olefins and Polyolefins—Europe, Asia, International (“O&P—EAI”) segment results on higher European polyolefins and olefins margins supplemented by higher European polyolefins volumes;
- Improved refining margins, offset by lower crude processing rates due primarily to unplanned maintenance in the latter part of the year at our Houston refinery;
- Steady Intermediates and Derivatives (“I&D”) segment results reflecting higher styrene and ethylene oxide (“EO”) and derivatives results offset in part by lower results for the TBA chain and acetyls; and
- Olefins and Polyolefins—Americas (“O&P—Americas”) results declined on lower olefins margins, partially offset by higher olefins volumes and improved polyolefins results.

Other noteworthy items during 2015 include the following:

- We repurchased approximately 51.8 million of our ordinary shares during 2015;
- We increased our interim dividend in 2015 from \$0.70 to \$0.78;
- We issued \$1 billion of 4.625% unsecured notes due 2055 in March 2015; and
- We completed a 250 million pounds per year ethylene expansion at our Channelview, Texas facility in the third quarter of 2015 and continued construction of an 800 million pounds per year ethylene expansion at our Corpus Christi, Texas facility to be completed in the second quarter of 2016.

Results of operations for the periods discussed in these “Results of Operations” are presented in the table below.

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Sales and other operating revenues	\$32,735	\$45,608	\$44,062
Cost of sales	25,683	38,939	37,940
Selling, general and administrative expenses	828	806	870
Research and development expenses	102	127	150
Operating income	6,122	5,736	5,102
Interest expense	(310)	(352)	(309)
Interest income	33	33	15
Other income (expense), net	25	38	(15)
Income from equity investments	339	257	203
Provision for income taxes	1,730	1,540	1,136
Income from continuing operations	4,479	4,172	3,860
Loss from discontinued operations, net of tax	(5)	(4)	(7)
Net income	<u>\$ 4,474</u>	<u>\$ 4,168</u>	<u>\$ 3,853</u>

RESULTS OF OPERATIONS

Revenues—We had revenues of \$32,735 million in 2015, \$45,608 million in 2014 and \$44,062 million in 2013.

2015 versus 2014—Revenues decreased by \$12,873 million, or 28%, in 2015 compared to 2014.

The decline in prices for crude oil and other feedstocks during 2015 was the primary contributing factor for lower average sales prices, which were responsible for 23% of the revenue decline in 2015 versus 2014. Unfavorable translation impacts resulting from a significant decline in the euro/U.S. dollar exchange rate further reduced revenues by 5% during 2015.

Sales volumes during 2015 were relatively unchanged from 2014. A decrease in sales due to lower crude processing rates in our Refining segment was mostly offset by higher sales volumes for other products, including U.S. and European polyolefins in our O&P—Americas and O&P—EAI segments, respectively; and TBA products, acetyls and styrene in our I&D segment.

Crude processing rates at our Houston refinery were negatively impacted in 2015 primarily as a result of unplanned maintenance outages during the last part of the year. Strong 2015 demand for polyethylene and the completion of an expansion-related turnaround at our Matagorda, Texas facility in the first quarter of 2014 led to the higher U.S. polyethylene sales volumes in 2015. European polyolefins sales volumes increased relative to 2014 on higher demand. European polypropylene sales volumes also benefited from higher operating rates in 2015. TBA product sales volumes benefited from, among other things, strong octane and gasoline demand and a tight market. An increase in methanol sales volumes due to higher operating rates and increased feedstock supply led to the higher acetyls sales volumes. Increased operating rates and industry outages boosted sales volumes during 2015 for PO & derivatives and EO and derivatives.

2014 versus 2013—Revenues increased \$1,546 million, or 4%, in 2014 compared to 2013.

Higher sales volumes for acetyls, styrene, PO and derivatives and refined products, which were offset in part by lower volumes for U.S. olefins and EO and derivatives, contributed to 4% higher revenues in 2014 compared to 2013. Higher acetyls sales volumes in 2014 benefited from the restart of our methanol plant at Channelview, Texas in December 2013. Sales volumes for styrene improved in 2014 compared to 2013, which was affected by

planned maintenance activities in the U.S. and Europe. Industry outages in Europe and Asia in 2014 led to higher volumes for PO and derivatives. An increase in sales volumes of refined products in 2014 reflects higher crude processing rates relative to 2013, which was negatively impacted by planned outages at our Houston refinery. Sales volumes for U.S. polyethylene were favorably affected by firm demand and the completion of an expansion and turnaround of our Matagorda, Texas polyethylene facility. These increases were offset in part by lower U.S. olefin sales volumes as 2014 volumes were impacted by an expansion-related turnaround at our La Porte, Texas facility. Unplanned outages in 2014 resulted in lower EO and derivative volumes during that period.

In 2014, higher average sales prices for U.S. polyethylene, polypropylene (“PP”), PP compounds, PO and derivatives, except butanediol (“BDO”), and vinyl acetate monomer (“VAM”) were offset by lower average sales prices for European polyethylene, butanediol, oxyfuels, C4 chemicals and refining products.

Increased demand and industry supply issues in 2014 led to the increase in U.S. polyethylene prices. The improvements in polypropylene prices reflected more favorable market conditions in 2014 versus 2013. Global industry constraints and limited regional supply led to increased prices for VAM and all of our PO and derivatives products, except butanediol, which declined due to excess industry capacity in Asia and the Middle East. The lower average sales prices for oxyfuels in 2014 reflected the impact of lower Brent crude oil and gasoline prices, which was partially offset by a higher octane blending premium. In 2014, the decline in C4 chemicals prices was driven by the lower energy profile, while the average sales prices for refining products reflected the decline in crude oil prices during the fourth quarter of 2014.

Cost of Sales—Cost of sales were \$25,683 million in 2015, \$38,939 million in 2014 and \$37,940 million in 2013.

2015 versus 2014—Cost of sales decreased by \$13,256 million in 2015 compared to 2014.

Cost of sales in 2015 includes pre-tax charges totaling \$548 million for noncash LCM inventory valuation adjustments in all of our segments except Technology. These adjustments were driven mainly by declines in the prices for crude oil, ethylene, propylene, benzene and ETBE. During 2015, cost of sales also includes \$35 million of amortization expense associated with the expiration of emission allowance credits in our Refining and I&D segments. Cost of sales in 2014 included a \$760 million charge related to an LCM inventory valuation adjustment driven by a decline in feedstock prices in our O&P—Americas segment and a \$52 million benefit in our O&P—EAI segment associated with a settlement for certain existing and future environmental claims under a 2005 indemnification agreement.

The decrease in cost of sales in 2015 was primarily due to lower feedstock costs. In 2015, the raw material costs for heavy liquids and natural gas liquids (“NGLs”) used in our O&P—Americas segment; naphtha and other feedstocks and propylene used in our O&P—EAI segment; benzene, propylene, butane, ethylene and ethanol used in our I&D segment; and crude oil used in our Refining segment were significantly lower relative to 2014.

2014 versus 2013—Cost of sales increased by \$999 million in 2014 compared to 2013. Non-cash, LCM charges related to inventories in all but our Technology segment were responsible for \$760 million of the \$999 million increase in Cost of sales. These charges, which were recognized in the third and fourth quarters of 2014, were primarily driven by declines in the prices of crude oil and products derived from or correlated to crude oil.

Excluding these LCM adjustments, cost of sales increased \$239 million in 2014 over 2013 primarily due to the impact of the higher sales volumes discussed above. The volume impact was reduced by the lower cost of crude oil and by the lower cost of ethylene production in the U.S. and Europe in 2014 compared to 2013.

Operating Income—Our operating income was \$6,122 million, \$5,736 million and \$5,102 million in 2015, 2014 and 2013, respectively.

2015 versus 2014—Operating income increased by \$386 million in 2015, which includes the impact of the \$548 million LCM inventory valuation adjustment and the emission credit allowances amortization discussed above.

Absent the LCM inventory valuation adjustments in 2015 and 2014, the amortization associated with the expiration of emission credit allowances in 2015 and the benefit from the environmental settlement in 2014, operating income was higher by \$261 million in 2015, compared to 2014. The improvement in results was primarily driven by the operations of our O&P—EAI and Refining segments. The primary drivers of the improvement in operating income were higher margins that benefited from lower feedstock costs and improved supply/demand fundamentals in our European olefins and polyolefins businesses. Higher refining margins also contributed to the increases in operating income. Improvements in polyolefins margins in our O&P—Americas segment added to these increases in 2015; however, lower olefin margins in that segment primarily driven by lower ethylene prices more than offset the polyolefins margin benefit. Improved styrene and EO and derivatives margins in our I&D segment, which also added to the improvement in operating income, were substantially offset by lower margins for TBA products and acetyls.

2014 versus 2013—Operating income increased by \$634 million in 2014, which includes the impact of the \$760 million LCM inventory valuation adjustment discussed above. This increase primarily reflects the impact of the higher sales volumes discussed above and margins that benefited from lower feedstock costs.

Apart from the LCM adjustment, margins were higher in 2014 across all businesses in our O&P—Americas and O&P—EAI segments, for PO and derivatives, acetyls and oxyfuels in our I&D segment and for refining products in our Refining segment. These higher margins were offset in part by lower margins for C4 chemicals, styrene and EO and derivatives in our I&D segment. Our higher margins generally reflected our lower cost of ethylene production and the lower cost of crude oil, but in some cases were driven by average sales prices that increased relative to the related feedstock costs. Lower margins for styrene and EO and derivatives reflected lower average sales prices compounded by higher feedstock costs and the lower C4 chemicals margins are attributed to falling energy prices.

Operating results for each of our business segments are reviewed further in the “Segment Analysis” section below.

Interest Expense—Interest expense was \$310 million in 2015, \$352 million in 2014 and \$309 million in 2013.

2015 versus 2014—The decrease in interest expense in 2015 relative to 2014 was primarily due to favorable impacts of \$85 million related to our fixed-for-floating interest rate swaps and cross-currency swaps. This decrease was offset in part by higher interest charges related to the issuance of our 4.875% guaranteed notes due 2044 in February 2014 and our 4.625% senior notes due 2055 in March 2015.

2014 versus 2013—The increase in interest expense in 2014 compared to 2013 was primarily due to interest related to the July 2013 issuances of our 4% guaranteed notes due 2023 and 5.25% guaranteed notes due 2043 and the February 2014 issuance of our 4.875% guaranteed notes due 2044. These increases were partially offset by a \$28 million net favorable adjustment related to our fixed-for-floating interest rate swaps.

See Note 14 to the Consolidated Financial Statements for additional information related to our fixed-for-floating interest rate swaps and cross-currency swaps.

Income from Equity Investments—Our income from equity investments was \$339 million in 2015, \$257 million in 2014 and \$203 million in 2013.

2015 versus 2014—Our 2015 Income from equity investments increased by \$82 million over 2014 largely due to improved margins in certain joint ventures as a result of favorable market prices during 2015 and strong operating rates.

2014 versus 2013—Income from equity investments increased by \$54 million over 2013. This improvement includes higher margins for some of our joint ventures in the Middle East, Europe and Asia, the impact of better operating rates at two of our joint ventures in Asia and one of our joint ventures in the Middle East that experienced significant unplanned maintenance in 2013. In 2014, an improved supply of feedstock at one of our Asian joint ventures also contributed to the higher operating rates relative to 2013.

Income Taxes—Our effective income tax rates of 27.9% in 2015, 27.0% in 2014 and 22.7% in 2013 resulted in tax provisions of \$1,730 million, \$1,540 million and \$1,136 million, respectively. Our effective income tax rate fluctuates based on, among other factors, changes in pretax income in countries with varying statutory tax rates, the U.S. domestic production activity deduction, changes in valuation allowances, changes in foreign exchange gains/losses, the amount of exempt income, and changes in unrecognized tax benefits associated with uncertain tax positions. The Company's exempt income primarily includes interest income and equity earnings of joint ventures. The interest income is earned by certain of our European subsidiaries through intercompany financings and is either untaxed or taxed at rates substantially lower than the U.S. statutory rate. The equity earnings are attributable to our joint ventures and these earnings when paid (dividend) to certain European subsidiaries are eligible for participation exemptions, which exempt the dividend payments from all or portions of normal statutory income tax rates. We currently anticipate the favorable treatment for the interest income and dividends to continue in the near term; however, this treatment is based on current law and tax rulings, which could change. The foreign exchange gains/losses have a permanent impact on our effective income tax rate that can cause unpredictable movement in our effective income tax rate. We continue to maintain valuation allowances in various jurisdictions totaling \$125 million, which could impact our effective tax rate in the future.

2015—The 2015 effective income tax rate, which was lower than the U.S. statutory tax rate of 35%, was favorably impacted by exempt income, earnings in various countries with lower statutory tax rates, (notably in Europe) and the U.S. domestic production activity deduction. These favorable items were partially offset by the effects of U.S. state and local income taxes.

2014—The 2014 effective income tax rate, which was lower than the U.S. statutory tax rate of 35%, was favorably impacted by exempt income, the U.S. domestic production activity deduction, foreign exchange losses, and earnings in various countries with lower statutory tax rates, (notably in Europe). These favorable items were partially offset by the effects of U.S. state and local income taxes.

2013—The 2013 effective income tax rate, which was lower than the U.S. statutory tax rate of 35%, was favorably impacted by the release of certain valuation allowances, exempt income, the U.S. domestic production activity deduction, and earnings in various countries with lower statutory tax rates (notably in Europe), partially offset by the effects of U.S. state and local taxes and foreign exchange gains. In 2013, we released valuation allowances primarily associated with tax losses in our French tax group resulting in an overall benefit of \$353 million.

For further information related to our income taxes, see Note 18 to the Consolidated Financial Statements.

Comprehensive Income—We had comprehensive income of \$4,064 million in 2015, \$3,052 million in 2014 and \$4,364 million in 2013.

2015 versus 2014—In 2015, Comprehensive income increased on higher net income, the reduction in actuarial losses related to our defined benefit pension and other postretirement benefit plans recognized in 2015, the favorable impact of unrealized net changes in foreign currency translation adjustments and to a lesser extent, the benefit of favorable financial derivative adjustments.

In 2015 and 2014, we recognized net actuarial losses of \$8 million and \$493 million, respectively. The \$493 million net loss in the prior year was caused primarily by pension and other postretirement benefit discount rate decreases and mortality assumption changes. In 2015, the \$8 million net loss was primarily attributable to \$133 million of actual asset return less than the expected return. This loss was offset by gains due to \$73 million of discount rate increases and, \$50 million of gains due to favorable liability experience and healthcare assumptions.

The predominant functional currency for our operations outside of the U.S. is the euro. Relative to the U.S. dollar, the value of the euro decreased during 2015 and 2014, resulting in losses as reflected in the Consolidated Statements of Comprehensive Income.

2014 versus 2013—Comprehensive income decreased by \$1,312 million in 2014 compared to 2013 primarily due to foreign currency translation losses and actuarial losses related to our defined benefit pension and other postretirement benefit plans that were recognized during the period. These losses were offset in part by the increase in 2014 net income over 2013. The predominant functional currency for our operations outside of the U.S. is the euro. Relative to the U.S. dollar, the value of the euro decreased in 2014 versus 2013, resulting in foreign currency translation losses, which decreased Comprehensive income by \$958 million. In 2014, we recognized net actuarial losses of \$493 million, which compares to a net actuarial gain of \$411 million recognized in 2013. This \$904 million decline in 2014 reflects \$663 million related to discount rate assumption changes and other immaterial liability experience gains and losses and \$241 million primarily related to actual asset return in excess of the expected return compared to 2013.

See “Critical Accounting Policies” below and Note 16 to the Consolidated Financial Statements for additional information on the key assumptions included in calculating the discount rate and expected return on plan assets.

Segment Analysis

We use earnings before interest, income taxes, and depreciation and amortization (“EBITDA”) as our measure of profitability for segment reporting purposes. This measure of segment operating results is used by our chief operating decision maker to assess the performance of and allocate resources to our operating segments. Intersegment eliminations and items that are not directly related or allocated to business operations are included in “Other.” For additional information related to our operating segments, as well as a reconciliation of EBITDA to its nearest generally accepted accounting principles (“GAAP”) measure, Income from continuing operations before income taxes, see Note 22, *Segment and Related Information*, to our Consolidated Financial Statements.

Our continuing operations are divided into five reportable segments: O&P—Americas; O&P—EAI; I&D; Refining; and Technology. The following tables reflect selected financial information for our reportable segments.

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Sales and other operating revenues:			
O&P—Americas segment	\$ 9,964	\$13,948	\$13,089
O&P—EAI segment	11,576	15,203	14,685
I&D segment	7,772	10,130	9,472
Refining segment	6,557	11,710	11,698
Technology segment	465	497	532
Other, including intersegment eliminations	(3,599)	(5,880)	(5,414)
Total	<u>\$32,735</u>	<u>\$45,608</u>	<u>\$44,062</u>
Income (loss) from equity investments:			
O&P—Americas segment	\$ 42	\$ 21	\$ 25
O&P—EAI segment	283	229	174
I&D segment	14	7	4
Total	<u>\$ 339</u>	<u>\$ 257</u>	<u>\$ 203</u>
EBITDA:			
O&P—Americas segment	\$ 3,661	\$ 3,911	\$ 3,573
O&P—EAI segment	1,825	1,366	839
I&D segment	1,475	1,459	1,492
Refining segment	342	65	182
Technology segment	243	232	232
Other, including intersegment eliminations	(13)	17	(7)
Total	<u>\$ 7,533</u>	<u>\$ 7,050</u>	<u>\$ 6,311</u>

Olefins and Polyolefins—Americas Segment

Overview—In calculating the impact of margin and volume on EBITDA, consistent with industry practice, management offsets revenues and volumes related to ethylene co-products against the cost to produce ethylene. Volume and price impacts of ethylene co-products are reported in margin. Ethylene is a major building block of our olefins and polyolefins businesses and as such management assesses the performance of the segment based on ethylene sales volumes and prices and our internal cost of ethylene production.

2015 versus 2014—Segment results were lower in 2015 primarily due to a decline in olefins results partially offset by improved polyolefin results relative to 2014. Olefins results in 2015 reflect lower margins, offset in part by higher sales volumes due partly to the completion of an 800 million pound ethylene expansion at our La Porte, Texas facility in September 2014. The decrease in olefins margins was driven by the decline in U.S. ethylene prices due to the impact of lower oil prices on global ethylene markets and increased U.S. ethylene supply. Margin improvements and higher sales volumes in 2015 led to the increased polyethylene and polypropylene results over 2014.

Margins in our olefins business in 2015 continued to benefit from low-cost ethylene produced from NGLs in North America, but to a lesser extent than in 2014 and 2013. The cost advantage for this ethylene, compared to that produced from naphtha and other crude oil-based liquids in the rest of the world, declined due to the lower crude oil prices in 2015. Higher U.S. polyethylene margins and volumes reflected continued strong global market conditions. Polypropylene margins expanded on significant strengthening of supply/demand balances.

Prices for heavy liquids, NGLs and olefins have declined significantly since the third quarter of 2014 to levels that have not been seen in recent years. These declines resulted in the recognition of the non-cash, LCM inventory adjustments totaling \$279 million in 2014 discussed below. Volatility in the benchmark prices for heavy liquids and natural gas and certain correlated products, particularly ethylene and propylene, which continued during most of 2015, led to net non-cash LCM inventory valuation adjustments totaling \$548 million during 2015.

2014 versus 2013—Segment results were higher in 2014, primarily due to improved polyethylene and olefins results and, to a lesser extent, better polypropylene margins. Margin improvements and an increase in 2014 sales volumes contributed to the improved polyethylene results over 2013. Our 2014 olefins results reflected higher margins relative to 2013, offset in part by a decrease in sales volumes from the outage at our La Porte, Texas facility prior to the completion of the ethylene expansion discussed above. Our segment results were negatively impacted by a \$279 million non-cash, LCM inventory valuation adjustment, most of which was recognized in the fourth quarter.

As mentioned above, the significant decline in prices for heavy liquids, NGLs and olefins in December 2014 to levels lower than the carrying value of our related inventories as of December 31, 2014 required us to record the LCM inventory valuation adjustment discussed above.

Ethylene Raw Materials—Benchmark crude oil and natural gas prices generally have been indicators of the level and direction of the movement of raw material and energy costs for ethylene and its co-products in the O&P—Americas segment. Ethylene and its co-products are produced from two major raw material groups:

- NGLs, principally ethane and propane, the prices of which are generally affected by natural gas prices; and
- crude oil-based liquids (“liquids” or “heavy liquids”), including naphtha, condensates, and gas oils, the prices of which are generally related to crude oil prices.

Although prices of these raw materials are generally related to crude oil and natural gas prices, during specific periods the relationships among these materials and benchmarks may vary significantly. In the U.S., we have significant capability to change the mix of raw materials used in the production of ethylene and its co-products to take advantage of the relative costs of heavy liquids and NGLs.

Production economics for the industry have favored NGLs in recent years. Although the decline in oil prices significantly reduced the cost of ethylene produced from heavy liquids in 2015, NGL prices also declined and they continued to be preferred feedstocks. Approximately 90% of our U.S. ethylene production was produced from NGLs during the past three years.

The following table shows the average U.S. benchmark prices for crude oil and natural gas for the applicable periods, as well as benchmark U.S. sales prices for ethylene and propylene, which we produce and sell or consume internally. The table also shows the discounted U.S. benchmark prices for certain polyethylene and polypropylene products. These industry benchmark prices are third party estimates that are indicative of contract sales for some key product grades, but do not necessarily describe price trends for our full olefins or polymers product mixes. The benchmark weighted average cost of ethylene production, which reflects credits for co-product sales, is based on a third party consultant's estimated ratio of heavy liquid raw materials and NGLs used in U.S. ethylene production.

	Average Benchmark Price and Percent Change Versus Prior Year Period Average					
	Year Ended December 31,			Year Ended December 31,		
	2015	2014	Change	2014	2013	Change
Crude oil, dollars per barrel:						
West Texas Intermediate ("WTI")	48.71	92.91	(48)%	92.91	98.06	(5)%
Light Louisiana Sweet ("LLS")	52.36	96.92	(46)%	96.92	107.31	(10)%
Natural gas (Henry Hub), dollars per million BTUs	2.57	4.51	(43)%	4.51	3.78	19%
United States, cents per pound:						
Weighted average cost of ethylene production	10.1	15.4	(34)%	15.4	16.2	(5)%
Ethylene	31.7	48.0	(34)%	48.0	46.7	3%
Polyethylene (high density)	63.6	77.0	(17)%	77.0	70.5	9%
Propylene—polymer grade	39.0	70.9	(45)%	70.9	68.7	3%
Polypropylene	62.8	86.3	(27)%	86.3	82.2	5%

The following table sets forth selected financial information for the O&P—Americas segment including Income from equity investments, which is a component of EBITDA.

Millions of dollars	Year Ended December 31,		
	2015	2014	2013
Sales and other operating revenues	\$9,964	\$13,948	\$13,089
Income from equity investments	42	21	25
EBITDA	3,661	3,911	3,573

Revenues—Revenues decreased by \$3,984 million, or 29%, in 2015 compared to 2014 and increased by \$859 million, or 7%, in 2014 compared to 2013.

2015 versus 2014—Average sales prices declined for most products in 2015 resulting in a 31% revenue decrease compared to 2014. Lower average olefin prices reflect the significant decline in prices for crude oil and correlated products relative to prices in 2014. The decline in average polyethylene and polypropylene sales prices followed the decline in the 2015 prices of their respective feedstocks, ethylene and propylene.

These decreases in revenues were offset in part by an increase in sales volumes, which gave rise to a 2% revenue increase in 2015, compared to 2014. Ethylene sales volumes were higher due to increased production reflecting higher capacity following the completion of the expansion-related turnaround at our La Porte, Texas facility during 2014 and additional production related to less planned and unplanned downtime at our Channelview, Texas facility. Polyethylene sales volumes improved in 2015, due to the completion of an expansion-related turnaround at our Matagorda, Texas facility in the first quarter of 2014 and continued healthy global demand. Polypropylene sales volumes, which were limited by production in both years, increased slightly in 2015 relative to 2014.

2014 versus 2013—The \$859 million increase in revenues in 2014 was the result of an improvement in average sales prices and increased sales volumes, which accounted for 6% and 1%, respectively, of the increase over 2013. Average sales prices in 2014 increased across most products, particularly polyethylene. Higher average polyethylene prices in 2014 reflected increased demand and industry supply issues in the ethylene and polyethylene markets. Average polypropylene prices also improved in 2014, reflecting a market environment that was more favorable than in 2013.

The increase in sales volumes in 2014 was primarily due to higher polyethylene sales volumes offset in part by a decrease in ethylene volumes. The increase in polyethylene sales volumes reflected the completion of an expansion-related turnaround at our Matagorda, Texas facility in the early part of 2014 and strong industry demand. Firm market demand throughout 2014 also contributed to the increase in polyethylene sales volumes over 2013. Ethylene volumes were negatively impacted by production constraints as a result of the turnaround at our La Porte, Texas facility during 2014. Polypropylene sales volumes were relatively unchanged between the 2014 and 2013 periods.

EBITDA—EBITDA decreased by \$250 million, or 6%, in 2015 compared to 2014 and increased by \$338 million, or 9%, in 2014 compared to 2013.

2015 versus 2014—The 6% decrease in EBITDA reflects a 24% net margin decline due to lower olefin margins, offset in part by a 14% increase related to higher volumes and a 3% increase related to the \$119 million decline in the non-cash charges related to the LCM inventory valuation adjustments discussed above. Improvements in our income from equity investments accounts for the remaining 1% increase in EBITDA during 2015.

The impact of significantly lower ethylene margins in 2015 was offset in part by increases in polyethylene and polypropylene margins compared to 2014. Olefin margins declined in 2015 as the average sales price of ethylene was driven down by the decline of naphtha feedstock prices, which generally trend with crude oil prices, and by improved market supply due to an improvement in industry operating rates and additional market capacity. A decrease in our cost of ethylene production partially offset the impact of the decline in ethylene sales price in 2015 lessening the impact of lower margins during the year. Lower NGL and heavy liquids feedstock prices in 2015 outpaced the decline in selling prices of our co-products, which resulted in the decrease of our cost of ethylene production compared to the prior year.

Polyethylene margins improved in 2015 as demand remained strong and decreases in the cost of ethylene feedstock more than offset lower average sales prices relative to 2014. Polypropylene margins, which increased in 2015, benefited from lower propylene feedstock costs, which in part reflect the decline in crude oil prices, and higher average sales prices relative to propylene, driven by industry operating issues and increased demand.

Sales volumes in 2015 increased as compared to the prior year as a result of downtime and expansion-related activities in 2014 and the increased demand discussed above.

2014 versus 2013—The 9% improvement in EBITDA during 2014 reflects a 19% increase related to higher margins which was offset in part by a 2% decrease related to volumes and an 8% decrease related to the \$279 million lower of cost or market inventory valuation adjustment discussed above.

Margins improved across all products, especially for olefins and polyethylene. The combination of higher ethylene sales prices discussed above, the lower cost of NGLs and heavy liquids, and higher co-product credits resulted in an improvement in olefins margins in 2014 compared to 2013. The increase in 2014 polyethylene margins reflect higher average sales prices as discussed above offset in part by increases in ethylene feedstock costs. Polypropylene margins also improved in 2014 due to the continued strength in pricing that carried over from late 2013.

The decrease in EBITDA attributable to the lower volumes reflects a decline in olefins volumes which was partially offset by increased polyethylene volumes.

Olefins and Polyolefins—Europe, Asia, International Segment

Overview

2015 versus 2014—Operating results in 2015 reflect improved results for our European polyolefins business and, to a lesser extent, higher results for our olefins business and better results for our joint ventures that are accounted for using the equity method. Polyethylene and polypropylene margins improved due to supply constraints as a result of several industry outages and the benefit of a lower price position compared to other regions resulting from the weakness in the euro. An increase in 2015 sales volumes also contributed to the higher polyethylene and polypropylene results relative to 2014. Olefins margins improved in 2015 as the lower cost of ethylene production, which was driven by lower feedstock prices, outpaced the decline in olefin product prices. Margins benefited for most of 2015 from a lag between declining feedstock costs and product prices. Turnaround activities at our Münchsmünster, Germany facility and unplanned outages resulted in a decrease in olefins sales volumes in 2015 relative to 2014.

At the end of the fourth quarter of 2015, lower feedstock and product prices resulted in market prices that were lower than the carrying value of our related inventories. Accordingly, we recorded a \$30 million non-cash, LCM inventory valuation charge related to our olefins and polyolefins businesses. This compares to the \$44 million non-cash, LCM inventory valuation charge recognized in the fourth quarter of 2014 discussed below.

2014 versus 2013—Operating results in 2014 reflect improved results for our olefins and European polyolefins businesses and, to a lesser extent, better results for our joint ventures that are accounted for using the equity method. Improvements in margins and operating rates, which surpassed European average industry rates, contributed to the higher olefins results in 2014. Higher polyolefins results in 2014 reflected improved margins versus 2013 and increased polyethylene volumes. Although market conditions for European producers remained highly competitive, the increase in European demand for polyolefins was consistent with the modest overall economic recovery that was evidenced in the region.

In the fourth quarter of 2014, the declining price of naphtha resulted in a market price lower than the carrying value of our related inventory necessitating the recognition of a \$44 million non-cash, LCM inventory valuation charge related to our olefins business. Despite this charge, our fourth quarter results remained consistent with our prior quarterly results during 2014. The fall of our product prices lagged behind the decline in feedstock prices throughout the latter part of 2014.

Ethylene Raw Materials—In Europe, heavy liquids are the primary raw materials for our ethylene production. In periods during 2015 not affected by turnaround activities, we increased the consumption of feedstocks other than naphtha, such as propane, butane and condensates, in our production process. The prices for these other feedstocks have been subject to declines that were at times of the same or greater magnitude as the declines in the crude oil prices.

The following table shows the average Western Europe benchmark prices for Brent crude oil for the applicable periods, as well as benchmark Western Europe prices for ethylene and propylene, which we produce and consume internally or purchase from unrelated suppliers, and discounted prices for certain polyethylene and polypropylene products. These industry benchmark prices are third party estimates that are indicative of contract sales for some key product grades, but do not necessarily describe price trends for our full olefins or polymers product mixes.

	Average Benchmark Price and Percent Change Versus Prior Year Period Average					
	Year Ended December 31,			Year Ended December 31,		
	2015	2014	Change	2014	2013	Change
Brent crude oil, dollars per barrel	53.60	99.45	(46)%	99.45	108.70	(8)%
Western Europe benchmark prices, €0.01 per pound:						
Weighted average cost of ethylene production	20.8	29.2	(29)%	29.2	34.7	(16)%
Ethylene	43.6	52.6	(17)%	52.6	55.8	(6)%
Polyethylene (high density)	56.0	54.5	3%	54.5	58.2	(6)%
Propylene	38.5	50.5	(24)%	50.5	49.5	2%
Polypropylene (homopolymer)	54.7	59.9	(9)%	59.9	57.9	3%
Average exchange rate, \$US per €	1.1105	1.3297	(15)%	1.3297	1.3280	0%

The following table sets forth selected financial information for the O&P—EAI segment including Income from equity investments, which is a component of EBITDA.

Millions of dollars	Year Ended December 31,		
	2015	2014	2013
Sales and other operating revenues	\$11,576	\$15,203	\$14,685
Income from equity investments	283	229	174
EBITDA	1,825	1,366	839

Revenues—Revenues in 2015 decreased by \$3,627 million, or 24%, compared to 2014 and increased by \$518 million, or 4%, in 2014 compared to 2013.

2015 versus 2014—The decline in 2015 revenues reflects decreases of 14% and 12% related to lower average sales prices and currency translation impacts, respectively. An increase in polyolefins volumes, which was substantially offset by a decline in olefins volumes stemming from turnaround activities and unplanned outages, was responsible for a 2% revenue increase in 2015.

In 2015, lower average sales prices for polypropylene and PP compounds were partially offset by higher average polyethylene prices. Decreases in feedstock costs in 2015 led to the decline in polypropylene and PP compounds sales prices compared to 2014. The increase in polyethylene prices in 2015 reflect strong spread increases over ethylene, primarily in Europe.

Higher polyethylene sales volumes reflect an increase in demand for our high density polyethylene as well as higher operating rates in 2015. Increased demand and an improvement in operating rates led to the increase in 2015 polypropylene sales volumes over 2014. Sale volumes for PP compounds increased in 2015 due to higher demand in the automotive industry. Lower production from our crackers related to turnaround activities during 2015 resulted in the decrease in olefins sales volumes.

2014 versus 2013—The increase in 2014 revenues comprises a 2% increase related to higher sales volumes and a 2% increase from higher average sales prices. Improved operations of our crackers in 2014 versus 2013 resulted in higher output, which led to increased olefins sales volumes. Higher polyethylene sales volumes reflect an increase in our low density polyethylene production capacity relative to 2013 due to operational issues during that time. Polypropylene sales volumes declined in 2014 largely due to lower output related to turnaround activities at one of our joint ventures during the first quarter of 2014 and the closure of our Clyde production facility in Australia in late 2013.

In 2014, improvements in the average sales prices for polypropylene and PP compounds were partially offset by a decline in average polyethylene prices. Increases in feedstock costs in 2014 led to the higher polypropylene and PP compounds sales prices compared to 2013. The lower polyethylene prices in 2014 reflected a decline in ethylene feedstock costs, primarily in Europe.

EBITDA—EBITDA increased by \$459 million, or 34%, in 2015 compared to 2014 and by \$527 million, or 63%, in 2014 compared to 2013.

2015 versus 2014—The 34% improvement in 2015 EBITDA reflects a 42% increase related to margins, a 4% increase related to higher volumes and an additional 4% increase stemming from improvements in income from our equity investments. These increases were partially offset by a 13% decrease due to the translation of a weaker euro and a 3% decrease related to a net charge of \$38 million discussed below. In 2015, EBITDA included a \$30 million charge related to LCM adjustments driven by a decline in naphtha prices and polyolefins prices. In 2014, EBITDA included a \$52 million benefit associated with a settlement for certain existing and future environmental claims under a 2005 indemnification agreement from an insurance settlement, which was offset in part by a \$44 million charge related to an LCM adjustment driven by a decline in naphtha prices.

The increase in 2015 results was mainly driven by better results for European polyolefins and olefins compared to 2014. Polyethylene results improved during 2015 on higher spreads, primarily due to a decline in ethylene feedstock costs and on increased sales volume, as discussed above. Polypropylene results increased in 2015 over the corresponding prior year period due to margin improvements from higher spreads and increased volumes, as discussed above. Higher olefins results reflect margin improvements, partly offset by a decline in volumes due to turnaround activity. Improved olefin margins reflect mid-year supply constraints due to industry outages, the decline in naphtha feedstock prices during the second half of 2015 and increased consumption of advantaged feedstocks in the first half of 2015.

The higher contribution to our results by certain of our joint ventures, which is reflected in Income from equity investments in 2015, is mainly driven by improved margins compared to 2014 in certain joint ventures as a result of favorable market prices during 2015 and strong operating rates.

2014 versus 2013—The 63% improvement in 2014 EBITDA included a 51% increase related to margins, a 7% increase related to higher volumes and a 7% increase related to improvements in income from our equity investments. These increases were partially offset by a 2% decrease related to a net charge of \$17 million discussed below. In 2014, EBITDA included a \$52 million benefit associated with a settlement for certain existing and future environmental claims under a 2005 indemnification agreement from an insurance settlement, which was offset in part by a \$44 million charge related to an LCM adjustment driven by a decline in naphtha prices. In 2013, EBITDA included a \$25 million benefit from an insurance settlement related to the damage to our LDPE plant described below.

The increase in 2014 results was mainly driven by improvements in earnings for olefins and European polyolefins compared to 2013. Higher olefins results reflect margin improvements and the impact of increased volumes discussed above. Olefin margins improved primarily due to the combination of the decline in naphtha feedstock prices during the second half of 2014, higher consumption of advantaged feedstocks and increased propylene sales prices driven by tightness in the European market. Polyethylene results improved during 2014 on increased sales volume, as discussed above, and on higher spreads, primarily due to a decline in ethylene feedstock costs. Polypropylene results increased in 2014 over the corresponding prior year period as the margin improvements from higher spreads more than offset the impact of the decline in volumes discussed above.

The higher contribution to our results by certain of our joint ventures, which is reflected in Income from equity investments in 2014, is mainly driven by improved margins compared to 2013 as a result of favorable market price developments during 2014.

Intermediates and Derivatives Segment

Overview

2015 versus 2014—Results in 2015 reflect improvements in our styrene business and, to a lesser extent, our ethylene oxide and derivatives business, offset in part by lower results for our oxyfuels and C4 chemicals (“TBA products”) and acetyls businesses. Stronger margins resulting from favorable product pricing and declining benzene and ethylene feedstock costs led to the improved styrene results. The decline in the 2015 results for acetyls and TBA products reflected a decrease in methanol prices due to increased industry supply and lower energy prices, respectively, compared to 2014 which reflected unusually high TBA product margins.

Our 2015 results were also unfavorably impacted by non-cash, LCM inventory valuation adjustments. The continued decline in benzene, ETBE and feedstock prices to levels that were lower than the carrying value of our related inventories at reporting dates throughout the year necessitated the recognition of \$181 million of LCM inventory valuation adjustments in 2015, an \$88 million increase over the LCM inventory valuation adjustment recognized in the fourth quarter of 2014.

Although 2015 results were strong, fourth quarter results reflected a considerable decline versus those achieved in the third quarter. Typical seasonal declines in demand, planned and unplanned outages and a \$74 million non-cash LCM inventory valuation adjustment recognized in the fourth quarter led the decline in fourth quarter results.

2014 versus 2013—Operating results for our I&D segment reflected a slight decline in 2014 compared to 2013 due to a \$93 million non-cash, LCM inventory valuation adjustment recognized in the fourth quarter of 2014. This adjustment was a result of the decline of prices for oxyfuels and the raw materials used to produce oxyfuels that fell to levels that were lower than the carrying value of our related inventories at December 31, 2014.

Absent this inventory valuation adjustment, results reflected improvements in acetyls and PO and derivatives that were offset in part by lower results for styrene, ethylene oxide/ethylene glycol (“EO/EG”), and the TBA chains. The increase in acetyls results was primarily driven by the restart of the Channelview, Texas methanol unit in December 2013. Industry outages and the delay of announced capacity additions contributed to the improvement in PO and derivatives results in 2014. In 2014, styrene results fell below 2013 results due to excess supply and higher feedstock prices compared to 2013. Unplanned maintenance in the last half of the year contributed to the decrease in our EO/EG results in 2014. The decrease in our TBA chain results reflected the impact of lower oxyfuels sales volumes that was partially offset by slightly better margins.

The following table sets forth selected financial information for the I&D segment including Income from equity investments, which is a component of EBITDA. In addition, the table shows methyl tertiary butyl ether (“MTBE”) margins in Northwest Europe (“NWE”).

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Sales and other operating revenues	\$7,772	\$10,130	\$9,472
Income (loss) from equity investments	14	7	4
EBITDA	1,475	1,459	1,492
 <u>Market margins, cents per gallon</u>			
MTBE–NWE	85.1	94.0	79.1

Revenues—Revenues for 2015 decreased by \$2,358 million, or 23%, compared to 2014 and increased by \$658 million, or 7%, in 2014 compared to 2013.

2015 versus 2014—The decrease in 2015 revenues reflects a decline in average sales prices for most products and a significantly weaker euro against the U.S. dollar, partly offset by higher sales volumes relative to the prior year. The declines in average sales prices and the currency translation impacts led to revenue decreases of 23% and 6%, respectively. These negative impacts were reduced by a 6% revenue increase related to higher sales volumes for our TBA, acetyls, PO and derivatives, styrene and EO and derivatives businesses.

In 2015, the significant decline in crude oil and other key feedstocks prices was the primary driver behind the overall decrease in average sales prices across most businesses. The impact of industry supply constraints in several businesses, principally styrene and EO/EG, due to planned and unplanned outages slowed the impact of falling prices; however, average sales prices fell below 2014 levels. This decline in prices was offset in part by TBA product octane blend premiums and gasoline price spreads over crude oil that were strong in 2015.

TBA product sales volumes increased due to strong octane and gasoline demand. Higher sales of purchased material and the reduction of inventory levels also contributed to this increase in sales volumes. Increased feedstock supply and an improvement in operating rates led to the increase in 2015 methanol sales volumes. Operating rates were higher in 2015 despite planned outages at our Channelview, Texas PO/SM plant and our PO / TBA plant at Fos sur Mer, France. These higher operating rates, which reflected strong global demand and the impact of industry outages, led to an increase in PO & derivatives and styrene sales volumes. Industry outage and higher operating rates contributed to the increased sales volumes for EO and derivatives.

2014 versus 2013—Sales volumes and average sales prices increased revenues by 6% and 1%, respectively, in 2014 compared to 2013.

Higher sales volumes for acetyls, styrene and PO were offset in part by a decline in EO and derivatives and oxyfuels sales volumes. The 2014 increase in acetyls sales volumes was mainly driven by the December 2013 restart of our methanol plant in Channelview, Texas. Sales volumes for styrene were higher in 2014 as volumes in 2013 were negatively impacted by planned plant outages at our Channelview, Texas and Maasvlakte, The Netherlands facilities, which limited production capacity during that period. PO sales volumes increased in 2015 largely due to industry outages in Asia and Europe in 2014. Due to unplanned outages at our Bayport, Texas facility in 2014, available production capacity was limited, which resulted in lower EO derivatives volumes compared to 2013. Planned and unplanned production constraints in 2014 were also responsible for lower oxyfuels volumes compared to 2013.

In 2014, higher average sales prices for PO and derivatives and VAM were partially offset by declines in the average sales prices for oxyfuels and C4 chemicals in 2014 compared to 2013. Global industry supply constraints and limited regional supply capacity led to higher prices for PO and derivatives as well as VAM in 2014 compared 2013. TBA product sales prices declined in 2014 relative to 2013 with lower crude oil and gasoline prices, which were partially mitigated by an increase in the octane blend premium. Octane blend premiums remained strong in 2014, primarily due to industry supply constraints and regionally strong blending demand.

EBITDA—EBITDA increased by \$16 million, or 1%, in 2015 compared to 2014 and decreased by \$33 million, or 2%, in 2014 compared to 2013.

2015 versus 2014—The 1% increase in EBITDA during 2015 reflects increases of 7% related to higher volumes and 1% related to improvements in income from our equity investments. These improvements were substantially offset by decreases of 6% related to the \$88 million incremental increase in the non-cash LCM inventory valuation adjustment recognized in 2015 over 2014 and by a 1% decrease related to lower margins in 2015.

Segment results in 2015 reflect better results for styrene and EO and derivatives, partly offset by lower results for our TBA chain and acetyls.

Higher styrene results in 2015 reflect significant margin improvements driven by tight supply resulting from industry outages and by benzene and ethylene feedstock prices that declined more rapidly than the average sales price of styrene. Results also benefited from increased sales volumes stemming from stronger market demand, industry outages and higher operating rates compared to 2014.

Ethylene oxide and derivative results were higher in 2015 relative to 2014, reflecting margin improvements and increased sales volumes. Despite a decline in product prices, margins improved as the ethylene feedstock prices declined more rapidly than the decline in average sales prices. Ethylene oxide volumes increased in 2015 compared to 2014, which was negatively impacted by constrained production due to turnaround activities.

Results for the TBA chain declined in 2015 reflecting lower margins offset in part by an increase in sales volumes as discussed above. A significant decline in crude oil prices, which was partly offset by strong gasoline price spreads over crude oil and octane blending value, led to a decrease in TBA product margins.

Acetyls results declined in 2015 relative to 2014 as lower margins were offset in part by increased sales volumes despite turnaround activities at our La Porte, Texas facility in the latter part of the year. The decrease in acetyls margins reflects a decline of methanol prices due to new industry supply and falling energy prices, partially offset by lower natural gas prices.

2014 versus 2013—EBITDA decreased in 2014 as a result of the \$93 million LCM inventory valuation adjustment in 2014 related to our oxyfuels business, which represented a 6% decrease in EBITDA compared to 2013. The impact of this charge was offset in part by a 2% increase in EBITDA related to 2013 charges totaling \$26 million associated with the sale of our investment in Nihon Oxirane Company discussed below. In addition to these items, a 10% increase in EBITDA related to higher volumes was offset in part by a decrease of 8% related to lower margins.

Apart from the one-time items discussed above, our 2014 results reflected improvements in PO and derivatives and acetyls, partially offset by lower results for oxyfuels, C4 chemicals, styrene and EO/EG compared to 2013.

Improved PO and derivatives results for 2014 benefitted from Asian start-up delays, industry outages and European industry supply interruptions. These global factors collectively led to higher PO sales volumes and increases in average sales prices in 2014 compared to 2013. In addition, PO and derivatives, particularly propylene glycols, benefitted from the unusually cold weather in early 2014 compared to 2013.

Higher acetyls results in 2014 predominantly reflected higher methanol volumes due to the restart of our methanol plant in Channelview, Texas in December 2013 combined with improved VAM driven by industry outages and a reduction in overall market supply compared to 2013. Although operational issues during 2014 limited the benefit derived from the restart of our methanol plant discussed above, the plant added approximately 180 million gallons to the overall results during that period. Improved VAM margins in 2014, as increases in average sales prices were partly offset by higher feedstock costs, also contributed to the higher acetyls results compared to 2013.

The lower oxyfuels results were mostly due to decreases in sales volumes in 2014 as a result of planned and unplanned outages discussed above. Margins improved moderately in 2014 compared to 2013 as lower Brent crude oil and gasoline prices were more than offset by the improved spread between gasoline and crude oil, stronger octane blend premiums and lower feedstock prices. Margins were also negatively impacted by a shift in the level of sales between regions; in addition, C4 chemicals results declined on falling energy prices.

The decline in styrene results in 2014 compared to 2013 was attributed to lower margins that were partially offset by the impact of the increase in sales volumes discussed above. Styrene margins decreased in 2014 compared to 2013 primarily due to lower average sales prices, reflecting weak demand and excess capacity, and higher benzene and ethylene feedstock prices.

EO/EG results in 2014 declined on lower margins and decreases in sales volumes relative to 2013.

Refining Segment

Overview—The Refining segment comprises the operations of our full conversion refinery located on the Houston Ship Channel in Houston, Texas.

2015 versus 2014—The results of our Refining segment in 2015 were impacted by non-cash charges totaling \$177 million related to LCM inventory valuation adjustments to reduce the carrying value of our inventories to market value at our third and fourth quarter reporting dates. These charges, which resulted from a near \$20 barrel decline in crude oil prices since the end of 2014 and corresponding reductions in refined product prices, were \$167 million less than the LCM inventory valuation adjustment recorded in 2014.

Fourth quarter 2015 results declined significantly compared to the results in the prior three quarters of 2015 as refinery operating rates were significantly lower due to unplanned maintenance outages. The recognition of a \$127 million non-cash, LCM inventory valuation adjustment resulted in a loss for the fourth quarter.

Excluding the impacts of the LCM inventory valuation adjustments recognized in both years, segment results for 2015 increased over 2014 as improvements in refining margins were largely driven by higher by-product price spreads over crude oil due to the drop in crude oil prices and increased purchases of crude oil at advantaged prices.

2014 versus 2013—The results of our Refining segment in 2014 were significantly impacted by a year-end, non-cash charge of \$344 million to reduce the carrying value of our inventories to market value at December 31, 2014. This inventory valuation charge was predicated on a near \$50 per barrel decline in crude oil prices since the third quarter of 2014 and corresponding reductions in refined product prices.

Fourth quarter 2014 results were markedly lower than results in the prior three quarters of 2014 as refined product margins contracted, and the recognition of the LCM inventory valuation adjustment resulted in a loss for the quarter. Excluding this charge, 2014 segment EBITDA reflected an increase over 2013 as refining margins improved, operating rates were higher, and costs for renewable identification numbers, a U.S. government established credit used to show compliance in meeting the Environmental Protection Agency’s Renewable Fuel Standard, declined by \$20 million.

The following table sets forth selected financial information and heavy crude processing rates for the Refining segment and the U.S. refining market margins for the applicable periods. “LLS” is a light crude oil, while “Maya” is a heavy crude oil.

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Sales and other operating revenues	\$6,557	\$11,710	\$11,698
EBITDA	342	65	182
Heavy crude oil processing rates, thousands of barrels per day	<u>238</u>	<u>259</u>	<u>232</u>
<u>Market margins, dollars per barrel</u>			
Light crude oil—2-1-1	\$14.04	\$ 13.32	\$ 12.89
Light crude oil—Maya differential	<u>8.26</u>	<u>11.11</u>	<u>10.05</u>
Total Maya 2-1-1	<u>\$22.30</u>	<u>\$ 24.43</u>	<u>\$ 22.94</u>

Revenues—Revenues decreased by \$5,153 million, or 44% in 2015 compared to 2014 and were nearly unchanged in 2014 compared to 2013.

2015 versus 2014—Total revenues decreased on significantly lower product prices due to the drop in crude oil prices and a reduction in sales volumes due to production limitations. The average crude oil price in 2015 declined by slightly over \$40 per barrel compared to 2014 leading to lower product pricing. This decline in product pricing caused a 38% decrease in revenues compared to 2014. Processing rates in 2015 reflect an 8% decrease from 2014 rates, driven by processing limits which were negatively impacted primarily by unplanned maintenance in the fourth quarter of 2015. This decline contributed to a 6% decrease in 2015 revenues.

2014 versus 2013—The increase in total revenues reflected increased sales volume, which were nearly offset by lower product prices. Sales volumes increased 8% in 2014 relative to 2013 on the benefit of near capacity crude processing rates during most of the year. Processing rates in 2014 reflect a 12% improvement over rates in 2013, which were negatively impacted by planned and unplanned maintenance. This increase was offset by a nearly 8% decrease in revenues driven by lower refined product prices attributable to a drop in crude oil prices in 2014.

EBITDA—EBITDA increased by \$277 million, or 426%, in 2015 compared to 2014 and decreased by \$117 million, or 64%, in 2014 compared to 2013.

2015 versus 2014—The \$177 million LCM inventory valuation adjustment in 2015 was significantly less than the \$344 million adjustment recorded in 2014. This change in the LCM inventory valuation adjustment increased EBITDA by 257%. Results also improved by an additional 283% in 2015 due to an increase in refining margins. These improvements were offset in part by a 114% decline due to lower processing rates.

The increase in refining margins in 2015 relative to 2014 was generated by improved by-product price spreads to crude oil and increased purchases of crude oil at advantaged prices relative to the Maya crude price benchmark. By-product spreads improved due to a decline in 2015 of the average per barrel price of crude oil relative to 2014. These factors more than offset the decline in the Maya 2-1-1 benchmark margin in 2015 versus 2014.

Crude processing rates in 2015 reflect an 8% decline relative to 2014. This decline is mainly due to a number of unplanned outages for maintenance that began in the latter part of the third quarter and extended into early December. The average crude processing rate for the fourth quarter of 2015 was 206 thousands of barrels per day. Processing rates returned to near full capacity by mid-December 2015.

2014 versus 2013—The \$344 million LCM inventory valuation adjustment in 2014 represented a 189% decrease in EBITDA during the period. EBITDA was lower in 2014 relative to 2013 by an additional 7% due to a \$14 million one-time recovery and settlement in 2013 discussed below. In addition to these items, our results reflected higher refining margins and higher volumes in 2014, which resulted in increases in EBITDA of 98% and 34%, respectively.

Higher refining margins in 2014 compared to 2013 were generated by improved average differentials between light and heavy crude oils, an increase in spreads between gasoline and diesel products versus light crude, improved by-product price spreads to crude oil cost and a decrease in the cost for RINs.

Refinery crude oil processing rates in 2014 were maintained near capacity with the exception of rates in the first quarter of 2014. Processing rates in the first quarter of 2014 were negatively impacted by temporary reductions in coking capacity due to the repair of equipment necessitated by operational issues experienced in December 2013. Planned repairs on a process vessel in April 2014 also resulted in reduced crude processing during that time.

Technology Segment

Overview—The Technology segment recognizes revenues related to the sale of polyolefin catalysts, licensing of chemical, polyolefin and other process technologies and associated engineering and other services. These revenues are offset in part by the costs incurred in the production of catalysts, licensing and services activities and in research and development (“R&D”) activities. In 2015, our Technology segment incurred approximately 55% of all R&D costs while in the corresponding periods of 2014 and 2013, it incurred approximately 65% and 70%, respectively, of our R&D costs.

2015 versus 2014—EBITDA in 2015 was relatively unchanged compared to 2014, reflecting improved catalyst results and lower R&D expenses, offset by lower licensing and services revenues.

2014 versus 2013—EBITDA in 2014 was unchanged compared to 2013, reflecting lower R&D expenses and, to a lesser extent, higher catalyst results, offset by lower licensing and services revenues.

The following table sets forth selected financial information for the Technology segment.

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Sales and other operating revenues	\$465	\$497	\$532
EBITDA	243	232	232

Revenues—Revenues decreased by \$32 million, or 6%, in 2015 compared to 2014 and by \$35 million, or 7%, in 2014 compared to 2013.

2015 versus 2014—The unfavorable currency translation impacts due to the significantly weaker euro versus the U.S. dollar and a decline in licensing and services revenues contributed 12% and 7% to the decrease in 2015 revenues. These declines were offset in part by revenue increases of 12% and 1%, respectively, related to higher catalyst sales volumes and higher average catalyst sales prices in 2015.

2014 versus 2013—Lower licensing and services revenues contributed 7% to the decrease in revenues in 2014 compared to 2013, which benefited from the one-time, lump-sum settlement associated with a process license agreement entered into in a prior year. Higher average catalyst sales prices increased revenues by 1% in 2014 while catalyst sales volumes reflected a corresponding decrease compared to the prior year period.

EBITDA—EBITDA in 2015 increased by \$11 million, or 5%, compared to 2014 and remained unchanged in 2014 compared to 2013.

2015 versus 2014—EBITDA increased by \$11 million, or 5%, in 2015 compared to 2014 as improved catalyst volumes and margins were partly offset by unfavorable currency translation impacts, and lower R&D expenses were more than offset by lower licensing and services revenues.

2014 versus 2013—EBITDA in 2014 reflects lower R&D expenses and moderately higher catalyst results, offset by lower licensing and services revenues as discussed above. The improvement in 2014 catalyst results over 2013 was the result of higher margins due to higher average sales prices and lower cost.

FINANCIAL CONDITION

Operating, investing and financing activities of continuing operations, which are discussed below, are presented in the following table:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Source (use) of cash:			
Operating activities	\$ 5,842	\$ 6,048	\$ 4,835
Investing activities	(1,051)	(3,531)	(1,602)
Financing activities	(4,850)	(5,907)	(1,589)

Operating Activities—Cash of \$5,842 million generated in 2015 primarily reflected earnings, adjusted for non-cash items, offset in part by cash used by the main components of working capital—accounts receivable, inventories and accounts payable.

The main components of working capital consumed cash of \$246 million in 2015. Total cash used by the \$786 million decrease in accounts payable and the \$240 million increase in inventories was offset in part by a \$780 million decline in accounts receivable. The decline in 2015 accounts payable reflects the lower cost of crude oil and other feedstocks. An increase in the levels of our U.S. olefins and crude oil inventories at year end led to the increase in 2015 inventories. U.S. olefins inventories increased in preparation for the turnaround at our Corpus Christi, Texas facility in 2016 while the unplanned maintenance outage at our Houston refinery resulted in the higher level of crude oil inventories at year end. Accounts receivable decreased on lower average product sales prices, reflective of the drop in 2015 crude oil prices.

Cash of \$6,048 million generated in 2014 primarily reflected earnings, adjusted for non-cash items, distributions from our joint ventures and refunds totaling \$232 million for value added taxes (“VAT”) related to prior periods that were received from Italian tax authorities in 2014. These cash inflows were offset in part by cash used by the main components of working capital—accounts receivable, inventories and accounts payable.

The main components of working capital used cash of \$225 million in 2014. Total cash used by the \$205 million increase in inventories and by the \$378 million decrease in accounts payable was offset in part by a \$358 million decline in accounts receivable. The increase in inventories primarily reflects higher olefins raw material inventories, which were offset in part by lower ethylene and propylene inventories due to turnaround activities at our La Porte, Texas facility, and higher levels of inventory for crude oil and work-in-process in our Refining segment. Accounts payable decreased due to lower feedstock costs in 2014 compared to 2013. The decrease in accounts receivable primarily reflects lower ethylene prices in our O&P—EAI segment, lower oxyfuels prices in our I&D segment, lower average sales prices and year end volumes in North American polyolefins and lower prices for refining products. Also contributing to the decline was a larger than usual accounts receivable balance at the end of 2013 attributable to customer remittance timing.

Cash of \$4,835 million generated in 2013 primarily reflected earnings, adjusted for non-cash items, proceeds received from Italian tax authorities for refunds of VAT from prior periods, distributions from our joint ventures, insurance settlements and cash provided by the main components of working capital. These increases were offset in part by company contributions to our pension plans.

The main components of working capital generated cash of \$60 million in 2013. This reflected increases of \$64 million, \$151 million, and \$275 million in accounts receivable, inventories and accounts payable, respectively. The increase in inventories was attributable to a build in our O&P—Americas polyethylene inventory at the end of 2013 in preparation for a turnaround scheduled during the first half of 2014 at our La Porte, Texas facility and an increase in crude inventory levels over 2012 levels. These increases were partially offset by decreases in our I&D segment inventories. The increase in accounts receivable reflected higher year

end O&P—Americas and I&D segment sales volumes in 2013 compared to 2012. A temporary increase in the purchase of intermediate feedstocks due to operating issues at the Houston refinery at the end of 2013 and an increase in payment terms for crude oil purchases in our Refining segment were the primary drivers for the increase in accounts payable.

Investing Activities—We invested cash of \$1,051 million, \$3,531 million and \$1,602 million in 2015, 2014 and 2013, respectively.

In 2014, we began to invest cash in investment-grade and other high-quality financial instruments that provide flexibility to redeploy funds as needed to meet our cash flow requirements while maximizing yield. In 2015 and 2014, we invested \$2,073 million and \$3,439 million, respectively, in securities, that are deemed available-for-sale and classified as Short-term investments. We also invested \$397 million and \$425 million in tri-party repurchase agreements in 2015 and 2014, respectively. These investments are classified as short-term loans receivable except for a \$101 million investment made during 2015 which is classified as a long-term loan receivable. We also received proceeds upon the sale and maturity of certain of our available-for-sale securities and repurchase agreement of \$2,489 million and \$350 million, respectively, in 2015 and \$1,751 million and \$75 million, respectively, in 2014. See Note 14 to the Consolidated Financial Statements for additional information regarding these investments.

The following table summarizes our capital expenditures plan for 2016 and actual capital expenditures for our continuing operations for the periods from 2013 through 2015:

<u>Millions of dollars</u>	<u>Plan 2016</u>	<u>Year Ended December 31,</u>		
		<u>2015</u>	<u>2014</u>	<u>2013</u>
Capital expenditures by segment:				
O&P—Americas	\$ 992	\$ 668	\$ 912	\$ 645
O&P—EAI	269	186	191	229
I&D	286	441	241	443
Refining	217	108	123	209
Technology	46	24	25	30
Other	23	13	7	5
Consolidated capital expenditures of continuing operations	<u>\$1,833</u>	<u>\$1,440</u>	<u>\$1,499</u>	<u>\$1,561</u>

The amounts presented for the 2016 Plan above include our contributions to our PO joint venture assets.

Capital spending projected for 2016 is expected to increase over 2015 levels. The largest projected increase is for our O&P—Americas segment and includes spending for projects related to environmental, health and safety matters, the ethylene expansion and related turnaround of our Corpus Christi, Texas facility, turnaround activities at one of our polyethylene facilities, the purchase of railcars and other projects. Spending in 2016 is also projected to be higher for our Refining and O&P—EAI segments versus 2015. Spending for the O&P—EAI segment is expected to increase as a result of turnaround activities at two of our facilities. Increased spending is planned for the Refining segment in 2016 as certain capital maintenance and turnaround projects scheduled in 2015 were deferred until 2016 during the strike at our Houston refinery. This increased level of spending is offset in part by lower projected spending in 2016 related to turnaround activities for our I&D segment as compared to 2015.

The decreased level of 2015 spending versus 2014 for our O&P—Americas segment reflects the completion in 2014 of the ethylene expansion and associated turnaround at our La Porte, Texas facility, a debottleneck at our Corpus Christi, Texas facility and the installation of new furnaces at our Channelview, Texas facility. Turnaround activities at four of our U.S. and European facilities resulted in an increase in 2015 capital spending over 2014. The completion of the 2014 O&P—Americas segment projects mentioned above are reflected in the

increase in 2014 capital spending relative to 2013. This increase was offset in part by reduced capital spending for our I&D, Refining and O&P—EAI segments in 2014 relative to 2013 due primarily to the completion in 2013 of the restart of our methanol plant in Channelview, Texas, a major turnaround at our Houston, Texas refinery, and a butadiene expansion project in Wesseling, Germany, respectively.

Financing Activities—Financing activities used cash of \$4,850 million, \$5,907 million and \$1,589 million in 2015, 2014 and 2013, respectively.

We made payments totaling \$4,656 million, \$5,788 million and \$1,949 million in 2015, 2014 and 2013, respectively, to acquire a portion of our outstanding ordinary shares. We also made dividend payments totaling \$1,410 million, \$1,403 and \$1,127 million to our shareholders in 2015, 2014 and 2013, respectively. For additional information related to these share repurchases and dividend payments, see Note 20 to the Consolidated Financial Statements.

In 2014, we entered into a commercial paper program. We received net proceeds of \$61 million and \$262 million through the issuance and repurchase of commercial paper instruments under this program during 2015 and 2014, respectively. See Note 12 to the Consolidated Financial Statements and the discussion of Liquidity and Capital Resources below for additional information related to our commercial paper program.

In March 2015, we issued \$1,000 million of 4.625% senior notes due 2055 and received net proceeds of \$984 million. In February 2014, we issued \$1,000 million of 4.875% guaranteed notes due 2044 and received net proceeds of \$988 million. In July 2013, we received net proceeds totaling \$1,468 million from the issuance of \$750 million of 4% guaranteed notes due 2023 and \$750 million of 5.25% guaranteed notes due 2043, and paid fees totaling \$23 million. Additional information related to these notes can be found in the Liquidity and Capital Resources section below and in Note 6 to the Consolidated Financial Statements

For additional information related to these financing activities, see Note 12 to the Consolidated Financial Statements.

Liquidity and Capital Resources—As of December 31, 2015, we had \$1,988 million unrestricted cash and cash equivalents and marketable securities classified as Short-term investments. For additional information related to our purchases of marketable securities, which currently include certificates of deposit, commercial paper, bonds and limited partnership investments, see the Investing Activities section above and Note 14 to the Consolidated Financial Statements.

At December 31, 2015, we held \$456 million of cash in jurisdictions outside the U.S., principally in the United Kingdom. Less than 6% of our consolidated cash and cash equivalent balance is held in a country that has established government imposed currency restrictions that could impede the ability of our subsidiary to transfer funds to us. There are currently no other material or legal or economic restrictions that would impede our transfers of cash.

We also had total unused availability under our credit facilities of \$2,862 million at December 31, 2015, which included the following:

- \$1,631 million under our \$2,000 million revolving credit facility, which backs our \$2,000 million commercial paper program. Availability under this facility is net of outstanding borrowings, outstanding letters of credit provided under the facility and notes issued under our \$2,000 million commercial paper program. A small portion of our availability under this facility is impacted by changes in the euro/U.S. dollar exchange rate. At December 31, 2015, we had \$323 million of outstanding commercial paper, no outstanding letters of credit and no outstanding borrowings under the facility;

- \$748 million under our \$900 million U.S. accounts receivable securitization facility. Availability under this facility is subject to a borrowing base of eligible receivables, which is reduced by outstanding borrowings and letters of credit, if any. This facility had no outstanding borrowings or letters of credit at December 31, 2015; and
- €430 million and \$14 million (totaling approximately \$483 million) under our €450 million European receivables securitization facility. Availability under this facility is subject to a borrowing base, net of outstanding borrowings. There were no outstanding borrowings under this facility at December 31, 2015.

See Note 12 to the Consolidated Financial Statements for additional information related to our credit facilities.

We have \$624 million of outstanding letters of credit and bank guarantees issued under uncommitted credit facilities at December 31, 2015. At December 31, 2015, we had total debt, including current maturities, of \$8,028 million.

In accordance with our current interest rate risk management strategy and subject to management's evaluation of market conditions and the availability of favorable interest rates among other factors, we may from time to time enter into interest rate swap agreements to economically convert a portion of our fixed rate debt to variable rate debt or convert a portion of variable rate debt to fixed rate debt.

In August 2015, we amended our U.S. accounts receivable securitization facility, which, among other things, decreased the purchase limit from \$1 billion to \$900 million, added a \$300 million uncommitted accordion feature and extended the term of the facility to August 2018.

In June 2015, we entered into an agreement to extend the maturity of our senior revolving credit facility to June 2020. In September 2015, we entered into an agreement to reduce the letters of credit sublimit of our senior revolving credit facility from \$700 million to \$500 million.

In March 2015, we issued \$1,000 million of 4.625% Notes due 2055 at a discounted price of 98.353%. Proceeds from these notes were used for general corporate purposes, including repurchases of our ordinary shares. Interest payments under these notes commenced on August 26, 2015. These unsecured notes rank equally in right of payment to all of LyondellBasell N.V.'s existing and future unsubordinated indebtedness.

The notes may be redeemed before the date that is six months prior to the scheduled maturity date at a redemption price equal to the greater of 100% of the principal amount of the notes redeemed and the sum of the present values of the remaining scheduled payments of principal and interest (discounted at the applicable Treasury Yield plus 35 basis points) on the notes to be redeemed. The notes may also be redeemed on or after the date that is six months prior to the final maturity date of the notes at a redemption price equal to 100% of the principal amount of the notes redeemed plus accrued and unpaid interest.

In October 2014, we entered into a commercial paper program under which we may issue up to \$2,000 million of privately placed, unsecured short-term promissory notes ("commercial paper"). This program is backed by our \$2,000 million Senior Revolving Credit Facility. Proceeds from the issuance of commercial paper may be used for general corporate purposes, including dividend payments and share repurchases. At December 31, 2015, we had \$323 million of commercial paper outstanding.

In February 2014, our direct, 100% owned subsidiary, LYB International Finance B.V., issued \$1,000 million of 4.875% Notes due 2044 at a discounted price of 98.831%. Proceeds from these notes were used for general corporate purposes, including repurchases of our ordinary shares. Interest payments under these notes commenced on September 15, 2014. These unsecured notes, which are fully and unconditionally guaranteed by LyondellBasell Industries N.V., rank equally in right of payment to all of LYB International Finance B.V.'s

existing and future unsecured indebtedness and to all of LyondellBasell's existing and future unsubordinated indebtedness. The notes may be redeemed before the date that is six months prior to the scheduled maturity date at a redemption price equal to the greater of 100% of the principal amount of the notes redeemed and the sum of the present values of the remaining scheduled payments of principal and interest (discounted at the applicable Treasury Yield plus 20 basis points) on the notes to be redeemed. The notes may also be redeemed on or after the date that is six months prior to the final maturity date of the notes at a redemption price equal to 100% of the principal amount of the notes redeemed plus accrued and unpaid interest.

On July 16, 2013, LYB International Finance B.V., issued \$750 million of 4% guaranteed notes due 2023 and \$750 million of 5.25% guaranteed notes due 2043 at discounted prices of 98.678% and 97.004%, respectively. Proceeds from these notes were used for general corporate purposes, including repurchases of our ordinary shares. Interest payments under these notes commenced on January 15, 2014. These unsecured notes, which are fully and unconditionally guaranteed by LyondellBasell Industries N.V., rank equally in right of payment to all of LYB International Finance B.V.'s existing and future unsecured indebtedness and to all of LyondellBasell's existing and future unsubordinated indebtedness. These notes may be redeemed or repaid at any time and from time to time prior to maturity at an amount equal to the greater of 100% of the principal amount of the notes redeemed and repaid, and the sum of the present values of the remaining scheduled payments of principal and interest on the notes to be redeemed (exclusive of interest accrued to the date of redemption) discounted to the date of redemption on a semi-annual basis at the applicable treasury yield plus 25 basis points in the case of the 4% Notes due 2023 and plus 30 basis points in the case of the 5.25% Notes due 2043.

In April 2013, we amended and restated our €450 million European receivables securitization facility to obtain more favorable terms and conditions, including reduced pricing, and to extend the maturity date of the facility to April 2016.

For additional information related to our credit facilities and Notes discussed above, see Note 12 to the Consolidated Financial Statements.

In May 2015, our shareholders approved a proposal to authorize us to repurchase up to an additional 10%, or approximately 47 million, of our shares outstanding over the next eighteen months. Our share repurchase program does not have a stated dollar amount, and purchases may be made through open market purchases, private market transactions or other structured transactions. Repurchased shares could be retired or used for general corporate purposes, including for various employee benefit and compensation plans. As of December 31, 2015, we have purchased 32 million shares under this program for approximately \$2,896 million. As of February 11, 2016, we had approximately 7 million shares remaining under the current authorization. The timing and amount of additional shares repurchased will be determined by our Management Board based on its evaluation of market conditions and other factors. For additional information related to our share repurchase programs, see Note 20 to the Consolidated Financial Statements.

On February 5, 2016, we received proceeds of \$184 million from the sale of our wholly owned subsidiary, Petroken Petroquímica Ensenada S.A.

We may repay or redeem our debt, including purchases of our outstanding bonds in the open market, using cash on hand, cash from operating activities, proceeds from the issuance of debt, proceeds from asset divestitures, or a combination thereof. We plan to fund our ongoing working capital, capital expenditures, debt service and other funding requirements with cash from operations, which could be affected by general economic, financial, competitive, legislative, regulatory, business and other factors, many of which are beyond our control. Cash on hand, cash from operating activities, proceeds from the issuance of debt, or a combination thereof, may be used to fund the repurchase of shares under our share repurchase program.

We intend to continue to declare and pay quarterly dividends, with the goal of increasing the dividend over time, after giving consideration to our cash balances and expected results from operations.

We believe that our cash on hand, cash from operating activities and proceeds from our credit facilities provide us with sufficient financial resources to meet our anticipated capital requirements and obligations as they come due.

Contractual and Other Obligations—The following table summarizes, as of December 31, 2015, our minimum payments for long-term debt, including current maturities, short-term debt, and contractual and other obligations for the next five years and thereafter:

Millions of dollars	Total	Payments Due By Period					Thereafter
		2016	2017	2018	2019	2020	
Total debt	\$ 8,195	\$ 357	\$ 37	\$ —	\$2,000	\$ —	\$ 5,801
Interest on total debt	6,313	406	406	406	406	356	4,333
Advances from customers	97	57	17	7	3	2	11
Other	2,032	1,269	316	119	102	28	198
Deferred income taxes	2,127	412	115	117	118	137	1,228
Other obligations:							
Purchase obligations:							
Take-or-pay contracts	11,863	2,321	2,314	2,256	2,048	1,107	1,817
Other contracts	10,519	3,560	2,568	2,051	377	308	1,655
Operating leases	1,799	372	312	278	197	149	491
Total	<u>\$42,945</u>	<u>\$8,754</u>	<u>\$6,085</u>	<u>\$5,234</u>	<u>\$5,251</u>	<u>\$2,087</u>	<u>\$15,534</u>

Total Debt—Our debt includes unsecured senior notes, guaranteed notes and various other U.S. and non-U.S. loans. See Note 12 to the Consolidated Financial Statements for a discussion of covenant requirements under the credit facilities and indentures and additional information regarding our debt facilities.

Interest on Total Debt—Our debt and related party debt agreements contain provisions for the payment of monthly, quarterly or semi-annual interest at a stated rate of interest over the term of the debt.

Pension and other Postretirement Benefits—We maintain several defined benefit pension plans, as described in Note 16 to the Consolidated Financial Statements. Many of our U.S. and non-U.S. plans are subject to minimum funding requirements; however, the amounts of required future contributions for all our plans are not fixed and can vary significantly due to changes in economic assumptions, liability experience and investment return on plan assets. As a result, we have excluded pension and other postretirement benefit obligations from the Contractual and Other Obligations table above. Our annual contributions may include amounts in excess of minimum required funding levels. Contributions to our non-U.S. plans in years beyond 2016 are not expected to be materially different than the expected 2016 contributions disclosed in Note 16 to the Consolidated Financial Statements. At December 31, 2015, the projected benefit obligation for our pension plans exceeded the fair value of plan assets by \$871 million. Subject to future actuarial gains and losses, as well as actual asset earnings, we, together with our consolidated subsidiaries, will be required to fund the \$871 million, with interest, in future years. We contributed \$107 million, \$94 million and \$172 million to our pension plans in 2015, 2014 and 2013, respectively. We provide other postretirement benefits, primarily medical benefits to eligible participants, as described in Note 16 to the Consolidated Financial Statements. We pay other unfunded postretirement benefits as incurred.

Advances from Customers—We are obligated to deliver products in connection with long-term sales agreements under which advances from customers were received in prior years. These advances are treated as deferred revenue and will be amortized to earnings as product is delivered over the remaining terms of the respective contracts, which range predominantly from 4 to 8 years. The unamortized long-term portion of such advances totaled \$40 million as of December 31, 2015.

Other—Other primarily consists of accruals for environmental remediation costs, obligations under deferred compensation arrangements, and anticipated asset retirement obligations. See “Critical Accounting Policies” below for a discussion of obligations for environmental remediation costs.

Deferred Income Taxes—The scheduled settlement of the deferred tax liabilities shown in the table is based on the scheduled reversal of the underlying temporary differences. Actual cash tax payments will vary depending upon future taxable income. See Note 18 to the Consolidated Financial Statements for additional information related to our deferred tax liabilities.

Purchase Obligations—We are party to various obligations to purchase products and services, principally for raw materials, utilities and industrial gases. These commitments are designed to assure sources of supply and are not expected to be in excess of normal requirements. The commitments are segregated into take-or-pay contracts and other contracts. Under the take-or-pay contracts, we are obligated to make minimum payments whether or not we take the product or service. Other contracts include contracts that specify minimum quantities; however, in the event that we do not take the contractual minimum, we are only obligated for any resulting economic loss suffered by the vendor. The payments shown for the other contracts assume that minimum quantities are purchased. For contracts with variable pricing terms, the minimum payments reflect the contract price at December 31, 2015.

Operating Leases—We lease various facilities and equipment under noncancelable lease arrangements for various periods. See Note 13 to the Consolidated Financial Statements for related lease disclosures.

CURRENT BUSINESS OUTLOOK

The decline in crude oil prices has continued into the early part of 2016. In our O&P—Americas and O&P—EAI segments, ethylene prices have trended down with crude oil and in O&P—Americas, with increased ethylene supplies due to high industry operating rates. As a result, the ethylene margin for O&P—Americas is expected to be lower on an NGL feedstock basis, whereas O&P—EAI should be able to hold and possibly grow the ethylene margin on a naphtha feedstock basis. Polyolefins margins in the U.S. and Europe are expected to remain healthy. In North America, polypropylene margins are being supported by a tight market and falling monomer prices could continue to support polyolefins margins in Europe. During the first quarter, we will commence a turnaround at our Berre, France cracker which is expected to impact first quarter results by \$20 million in our O&P—EAI segment.

Thus far, our I&D segment has seen stable demand in the propylene oxide market; however, the restart of competitor plants impacted by outages may impact global product balances. Strong gasoline prices and octane premiums partially offset the negative impacts of lower crude oil prices and seasonally higher butane prices on oxyfuels margins. Additional capacity that has entered the market is putting downward pressure on our methanol margins.

Although our Refining segment expects to benefit from an improved Maya 2-1-1 spread stemming from higher gasoline margins, planned maintenance on a crude unit and coker at our Houston refinery, which is currently underway, is expected to have a \$40 million negative impact on first quarter results. As a result of these maintenance activities, first quarter crude processing rates are expected to be similar to fourth quarter 2015 rates.

RELATED PARTY TRANSACTIONS

We have related party transactions with a major shareholder and its affiliates and our joint venture partners. We believe that such transactions are effected on terms substantially no more or less favorable than those that would have been agreed upon by unrelated parties on an arm’s length basis. See Note 4 to the Consolidated Financial Statements for additional related party disclosures.

CRITICAL ACCOUNTING POLICIES

Management applies those accounting policies that it believes best reflect the underlying business and economic events, consistent with accounting principles generally accepted in the U.S. (see Note 2 to the Consolidated Financial Statements). Our more critical accounting policies include those related to the valuation of inventory, long-lived assets, the valuation of goodwill, accruals for long-term employee benefit costs such as pension and other postretirement costs, and accruals for taxes based on income. Inherent in such policies are certain key assumptions and estimates made by management. Management periodically updates its estimates used in the preparation of the financial statements based on its latest assessment of the current and projected business and general economic environment.

Inventory—We account for our inventory using the last-in, first-out (“LIFO”) method of accounting.

The cost of raw materials, which represents a substantial portion of our operating expenses, and energy costs generally follow price trends for crude oil and/or natural gas. Crude oil and natural gas prices are subject to many factors, including changes in economic conditions. Fluctuation in the prices of crude oil and natural gas from period to period may result in the recognition of charges to adjust the value of inventory to the lower of cost or market in periods of falling prices and the reversal of those charges in subsequent interim periods as market prices recover. Accordingly, our cost of sales and results of operations may be affected by such fluctuations.

On May 1, 2010, upon emergence from bankruptcy, we recorded our inventory, which is primarily crude oil and correlated products derived therefrom, at fair value in accordance with the requirements of fresh-start accounting. The per barrel benchmark price of WTI crude oil at that date was \$86.15.

During 2014, we recorded LCM inventory valuation adjustments totaling \$760 million driven primarily by the decline in the price of crude oil and related declines in the prices of heavy liquids and other correlated products. A \$45 million charge was taken in the third quarter of 2014 which marked the beginning of the current downward price trend. An additional \$715 million of LCM inventory valuation adjustment was recognized in the fourth quarter of 2014 to reflect decreases of approximately 50% in the price indices for crude oil and other correlated products as compared to the third quarter of 2014. Since our inventory consists of manufactured products derived from crude oil, natural gas, natural gas liquids and correlated materials, as well as the associated feedstocks and intermediate chemicals, our inventory market values are generally influenced by changes in benchmark crude oil and heavy liquid values and prices for manufactured finished goods. The degree of influence of a particular benchmark may vary from period to period, as the composition of the dollar value LIFO pools change. Due to natural inventory composition changes, variation in pricing from period to period does not necessarily result in a linear LCM impact. Additionally, an LCM condition may arise due to a decline in a particular material that had previously provided a positive impact within a pool. As a result, market valuations and LCM conditions are dependent upon the composition and mix of materials on hand at the balance sheet date. In the measurement of an LCM adjustment, the numeric input value for determining the crude oil market price includes pricing that is weighted by volume of inventories held at a point in time, including WTI, Brent and Maya crude oils. At December 31, 2014, representative prices for crude oil and heavy liquids were \$47.59 per barrel and \$45.20 per barrel, respectively. These price inputs were calculated using a weighted average of the materials held in inventory on that date.

The trend of falling hydrocarbon prices continued in 2015, leading to further LCM inventory valuation adjustments. In 2015, the cumulative charge related to LCM inventory valuation adjustments, which was driven by declines in crude oil, ethylene, propylene, benzene and ETBE, was \$548 million. Representative prices used in the calculation of the cumulative LCM inventory adjustments recognized in 2015 were \$30.22 per barrel for crude oil, 20 cents per pound for ethylene, 32 cents per pound for propylene, \$2.14 per gallon for benzene and \$1.66 per gallon for ETBE. For additional information related to these LCM inventory adjustments, see Note 22. Further sustained price declines in our finished goods and raw materials could result in additional LCM inventory valuation charges during 2016.

Currently all but one of our LIFO inventory pools are “at-risk” for further adjustment as each impacted LIFO pool is at, or approximates, the calculated market value at the last balance sheet measurement date. “At-risk” inventory accounts for \$3.3 billion of our total inventory carrying value of \$4.1 billion as of December 31, 2015. The extent to which further adjustment may occur is dependent on pool specific product prices and composition within each individual dollar value LIFO pool at the balance sheet date.

Long-Lived Assets—With respect to long-lived assets, which primarily include property, plant and equipment and intangible assets, key assumptions included estimates of useful lives and the recoverability of carrying values of fixed assets and other intangible assets, as well as the existence of any obligations associated with the retirement of fixed assets. Such estimates could be significantly modified and/or the carrying values of the assets could be impaired by such factors as new technological developments, new chemical industry entrants with significant raw material or other cost advantages, uncertainties associated with the European, U.S. and other world economies, the cyclical nature of the chemical and refining industries, and uncertainties associated with regulatory governmental actions.

When events or changes in circumstances indicate that the carrying value of an asset may not be recoverable, we evaluate definite lived intangible assets for impairment. Long-lived assets are grouped at the lowest level for which there are identifiable cash flows that are largely independent of the cash flows of other groups of assets, which for us is generally at the plant group level (or, at times individual plants in certain circumstances where we have isolated production units with separately identifiable cash flows). When it is probable that the undiscounted cash flows of a tangible asset or asset group will not be sufficient to recover the carrying amount, the asset is written down to its estimated fair value. In-process research and development projects are impaired when abandoned.

The estimated useful lives of long-lived assets range from 3 to 30 years. Depreciation and amortization of these assets, including amortization of capitalized plant turnaround costs, under the straight-line method over their estimated useful lives totaled \$1,047 million in 2015. The useful lives of assets are assessed periodically and if determined to be shorter than originally estimated, depreciation and amortization charges would be accelerated over the revised useful life.

Goodwill—Goodwill of \$536 million at December 31, 2015 represents the tax effect of the differences between the tax and book bases of our assets and liabilities resulting from the revaluation of those assets and liabilities to fair value in connection with the Company’s emergence from bankruptcy and adoption of fresh-start accounting. We evaluate the recoverability of the carrying value of goodwill annually or more frequently if events or changes in circumstances indicate that the carrying amount of the goodwill of a reporting unit may not be fully recoverable.

We have the option to first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. Qualitative factors assessed for each of the reporting units include, but are not limited to, changes in long-term commodity prices, discount rates, competitive environments, planned capacity, cost factors such as raw material prices, and financial performance of the reporting units. If the qualitative assessment indicates that it is more likely than not that the carrying value of a reporting unit exceeds its estimated fair value, a two-step quantitative test is required.

We also have the option to proceed directly to the two-step quantitative impairment test. Under the two-step impairment test, the fair value of each reporting unit is compared to its carrying value, including goodwill. For step one of the impairment test, the fair value of the reporting unit is calculated using a discounted cash-flow model. Such a model inherently utilizes a significant number of estimates and assumptions, including operating margins, tax rates, discount rates, capital expenditures and working capital changes. Step two of the impairment test would be performed should management conclude that the carrying value of a reporting unit, including goodwill, is in excess of its fair value. In step two of the impairment test, the carrying amount of a reporting unit’s goodwill is compared to the implied fair value of its goodwill. Valuation experts may be used in such an assessment. If the carrying value of goodwill exceeds its implied fair value, an impairment charge equal to the excess would be recognized.

For 2015, management performed a qualitative impairment assessment of our reporting units which indicated that the fair value of our reporting units was greater than their carrying value. Accordingly, a quantitative two-step goodwill impairment test was not required. In 2014, management voluntarily performed a quantitative two-step goodwill impairment test for all reporting units. The fair value of each of our reporting units was substantially in excess of its carrying value. Accordingly, no goodwill impairment was recognized in 2014.

Long-Term Employee Benefit Costs—Our costs for long-term employee benefits, particularly pension and other postretirement medical and life insurance benefits, are incurred over long periods of time, and involve many uncertainties over those periods. The net periodic benefit cost attributable to current periods is based on several assumptions about such future uncertainties, and is sensitive to changes in those assumptions. It is management's responsibility, often with the assistance of independent experts, to select assumptions that in its judgment represent its best estimates of the future effects of those uncertainties. It also is management's responsibility to review those assumptions periodically to reflect changes in economic or other factors that affect those assumptions.

The current benefit service costs, as well as the existing liabilities, for pensions and other postretirement benefits are measured on a discounted present value basis. The discount rate is a current rate, related to the rate at which the liabilities could be settled. Our assumed discount rate is based on yield information for high-quality corporate bonds with durations comparable to the expected cash settlement of our obligations. For the purpose of measuring the benefit obligations at December 31, 2015, we used a weighted average discount rate of 4.38% for the U.S. plans which reflects the different terms of the related benefit obligations. The weighted average discount rate used to measure obligations for non-U.S. plans at December 31, 2015 was 2.70%, reflecting market interest rates. The discount rates in effect at December 31, 2015 will be used to measure net periodic benefit cost during 2016.

The benefit obligation and the periodic cost of other postretirement medical benefits are also measured based on assumed rates of future increase in the per capita cost of covered health care benefits. As of December 31, 2015, the assumed rate of increase for our U.S. plans was 7.3%, decreasing to 4.5% in 2038 and thereafter. A one percentage point change in the health care cost trend rate assumption would have had no significant effect on either the benefit liability or the net periodic cost, due to limits on our maximum contribution level under the medical plan.

The net periodic cost of pension benefits included in expense also is affected by the expected long-term rate of return on plan assets assumption. Investment returns that are recognized currently in net income represent the expected long-term rate of return on plan assets applied to a market-related value of plan assets which, for us, is defined as the market value of assets. The expected rate of return on plan assets is a longer term rate, and is expected to change less frequently than the current assumed discount rate, reflecting long-term market expectations, rather than current fluctuations in market conditions.

The weighted average expected long-term rate of return on assets in our U.S. plans of 8.00% is based on the average level of earnings that our independent pension investment advisor had advised could be expected to be earned over time and 3.63%, for our non-U.S. plan assets is based on an expectation and asset allocation that varies by region. The asset allocations are summarized in Note 16 to the Consolidated Financial Statements. The actual returns in 2015 were a loss of 0.83% for U.S. plan assets and a gain of 1.26% for non-U.S. plan assets.

The actual rate of return on plan assets may differ from the expected rate due to the volatility normally experienced in capital markets. Management's goal is to manage the investments over the long term to achieve optimal returns with an acceptable level of risk and volatility.

Net periodic pension cost recognized each year includes the expected asset earnings, rather than the actual earnings or loss. Along with other gains and losses, this unrecognized amount, to the extent it cumulatively exceeds 10% of the projected benefit obligation for the respective plan, is recognized as additional net periodic benefit cost over the average remaining service period of the participants in each plan.

The following table reflects the sensitivity of the benefit obligations and the net periodic benefit costs of our pension plans to changes in the actuarial assumptions:

<u>Millions of dollars</u>	<u>Effects on Benefit Obligations in 2015</u>		<u>Effects on Net Periodic Pension Costs in 2016</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Projected benefit obligations at December 31, 2015	\$2,066	\$1,317	\$—	\$—
Projected net periodic pension costs in 2016			14	51
Discount rate increases by 100 basis points	(214)	(162)	(15)	(4)
Discount rate decreases by 100 basis points	262	196	16	11

The sensitivity of our postretirement benefit plans obligations and net periodic benefit costs to changes in actuarial assumptions are reflected in the following table:

<u>Millions of dollars</u>	<u>Effects on Benefit Obligations in 2015</u>		<u>Effects on Net Periodic Benefit Costs in 2016</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Projected benefit obligations at December 31, 2015	\$285	\$ 56	\$—	\$—
Projected net periodic benefit costs in 2016			15	6
Discount rate increases by 100 basis points	(26)	—	(2)	—
Discount rate decreases by 100 basis points	31	—	(1)	—

Additional information on the key assumptions underlying these benefit costs appears in Note 16 to the Consolidated Financial Statements.

Accruals for Taxes Based on Income—The determination of our provision for income taxes and the calculation of our tax benefits and liabilities is subject to management’s estimates and judgments due to the complexity of the tax laws and regulations in the tax jurisdictions in which we operate. Uncertainties exist with respect to interpretation of these complex laws and regulations.

Deferred tax assets and liabilities are determined based on temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, and are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to reverse.

We recognize future tax benefits to the extent that the realization of these benefits is more likely than not. Our current provision for income taxes is impacted by the recognition and release of valuation allowances related to net deferred assets in certain non-U.S. jurisdictions. Further changes to these valuation allowances may impact our future provision for income taxes, which will include no tax benefit with respect to losses incurred and no tax expense with respect to income generated in these countries until the respective valuation allowance is eliminated.

We recognize the financial statement benefits with respect to an uncertain income tax position that we have taken or may take on an income tax return when we believe it is more likely than not that the position will be sustained with the tax authorities. For a position that is likely to be sustained, the benefit recognized in the financial statements is measured at the largest cumulative amount that is greater than 50 percent likely of being realized.

For further information related to our income taxes, see Note 18 to the Consolidated Financial Statements.

ACCOUNTING AND REPORTING CHANGES

For a discussion of the potential impact of new accounting pronouncements on our Consolidated Financial Statements, see Note 2 to the Consolidated Financial Statements.

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

See Note 14 to the Consolidated Financial Statements for discussion of LyondellBasell Industries N.V.'s management of commodity price risk, foreign currency exposure and interest rate risk through its use of derivative instruments and hedging activities.

Commodity Price Risk

A substantial portion of our products and raw materials are commodities whose prices fluctuate as market supply and demand fundamentals change. Accordingly, product margins and the level of our profitability tend to fluctuate with changes in the business cycle. We try to protect against such instability through various business strategies. These include provisions in sales contracts allowing us to pass on higher raw material costs through timely price increases, formula price contracts to transfer or share commodity price risk, and increasing the depth and breadth of our product portfolio.

In addition, we selectively use commodity swap and futures contracts with various terms to manage the volatility related to raw materials and product sales. Such contracts are generally limited to durations of one year or less. Hedge accounting has not been elected for any of our commodity contracts in any of the periods presented. Market risks created by these derivative instruments and the mark-to-market valuations of open positions are considered by management prior to execution and monitored daily.

The estimated fair value and notional amounts of our open commodity futures contracts and swap contracts are shown in the table below:

December 31, 2015					
<u>Millions of dollars</u>	<u>Fair Value</u>	<u>Notional Amounts</u>		<u>Volume Unit</u>	<u>Maturity Dates</u>
		<u>Value</u>	<u>Volumes</u>		
Futures:					
Crude/Distillates	(2)	\$ 57	252	million gallons	October 2016
Heating oil	\$—	10	9	million gallons	February 2016 - April 2016
Butane	1	1	8	million gallons	February 2016
Crude oil	<u>7</u>	<u>72</u>	78	million gallons	February 2016 - May 2016
	<u>\$ 6</u>	<u>\$140</u>			
December 31, 2014					
<u>Millions of dollars</u>	<u>Fair Value</u>	<u>Notional Amounts</u>		<u>Volume Unit</u>	<u>Maturity Dates</u>
		<u>Value</u>	<u>Volumes</u>		
Futures:					
Heating oil	(1)	28	15	million gallons	January 2015
Crude oil	<u>2</u>	<u>—</u>	<u>—</u>	million gallons	February 2015
	<u>\$ 1</u>	<u>\$ 28</u>			

We use value at risk ("VAR"), stress testing and scenario analysis for risk measurement and control purposes.

VAR estimates the maximum potential loss in fair market values, given a certain move in prices over a certain period of time, using specified confidence levels.

Using sensitivity analysis and hypothetical changes in market prices ranging from 12% to 28%, which represent a three month volatility range of the underlying products, the effect on our pretax income would be \$11 million. The quantitative information about market risk is necessarily limited because it does not take into account the effects of the underlying operating transactions.

Foreign Exchange Risk

We manufacture and market our products in a number of countries throughout the world and, as a result, are exposed to changes in foreign currency exchange rates. We enter into transactions in currencies other than the applicable functional currency.

A significant portion of our reporting entities use the euro as their functional currency. Our reporting currency is the U.S. dollar. The translation gains or losses that result from the process of translating the euro denominated financial statements to U.S. dollars are deferred in accumulated other comprehensive income (“AOCI”) until such time as those entities may be liquidated or sold. Changes in the value of the U.S. dollar relative to the euro can therefore have a significant impact on comprehensive income.

In September 2015, we entered into €850 million (\$944 million) cross-currency floating-to-floating interest rate swaps (“basis swaps”) to reduce the volatility from foreign currency fluctuations associated with our net investment in foreign operations. These swaps, which have been classified as net investment hedges, will mature between September 2016 and September 2018. Under these contracts, we will make interest payments in euros at 3 Month EURIBOR plus basis and will receive interest in U.S. dollars at 3 Month LIBOR. Upon the maturities of these contracts, we will pay the principal amount in euros and receive U.S. dollars from our counterparties. At December 31, 2015, a 10% fluctuation in foreign currency rates would have had a \$92 million impact on Other comprehensive income (loss). A 10% fluctuation in the EURIBOR and LIBOR rates at December 31, 2015 would have had an immaterial impact on Other comprehensive income (loss).

In December 2015, we also entered into €750 million (\$795 million) of forward exchange contracts to reduce the volatility from foreign currency fluctuations associated with our net investment in foreign operations. These forward exchange contracts, which have been designated as net investment hedges, require us to sell €750 million on March 31, 2016 at the contracted forward exchange rate. At December 31, 2015, a 10% fluctuation in the Euro / USD dollar rate would have had a €75 million (\$82 million) impact on Other comprehensive income (loss).

Some of our operations enter into transactions that are not denominated in their functional currency. This results in exposure to foreign currency risk for financial instruments, including, but not limited to third party and intercompany receivables and payables and intercompany loans.

We maintain risk management control practices to monitor the foreign currency risk attributable to our inter-company and third party outstanding foreign currency balances. These practices involve the centralization of our exposure to underlying currencies that are not subject to central bank and/or country specific restrictions. By centralizing most of our foreign currency exposure into one subsidiary, we are able to take advantage of any natural offsets thereby reducing the overall impact of changes in foreign currency rates on our earnings. At December 31, 2015, a 10% fluctuation compared to the U.S. dollar in the underlying currencies that have no central bank or other currency restrictions related to non-hedged monetary net assets would have had a resulting additional impact to earnings of approximately \$1 million.

Our policy is to maintain an approximately balanced position in foreign currencies to minimize exchange gains and losses arising from changes in exchange rates. To minimize the effects of our net currency exchange exposures, we enter into foreign currency spot and forward contracts and, in some cases, cross-currency swaps.

We also engage in short-term foreign exchange swaps in order to roll certain hedge positions and to make funds available for intercompany financing. Our net position in foreign currencies is monitored daily.

We have entered into \$2,300 million of non-cancellable cross-currency swaps, which we designated as foreign currency cash flow hedges, to reduce the variability in the functional currency equivalent cash flows of certain foreign currency denominated intercompany notes. For a summary of the estimated fair value and notional amounts for our cross-currency swaps outstanding at December 31, 2015, see Note 14 to the Consolidated Financial Statements.

For 2015, 2014, and 2013, Other income (expense), net in the Consolidated Statements of Income reflected a loss of \$7 million, a gain of \$15 million, and a loss of \$4 million, respectively, in net exchange rate gains and losses. For forward contracts, including swap transactions, that economically hedge recognized monetary assets and liabilities in foreign currencies, no hedge accounting is applied. Changes in the fair value of foreign currency forward contracts are reported in the Consolidated Statements of Income and offset the currency exchange results recognized on the assets and liabilities.

Interest Rate Risk

We are exposed to interest rate risk with respect to our fixed and variable rate debt. Fluctuations in interest rates impact the fair value of fixed-rate debt as well as pretax earnings stemming from interest expense on variable-rate debt.

Fixed-rate debt—In 2015, we entered into forward-starting interest rate swaps to mitigate the risk of adverse changes in the benchmark interest rates on the anticipated refinancing of our senior notes due 2019. These interest rate swaps are designated as cash flow hedges. At December 31, 2015, the total notional amount of these forward-starting interest rate swaps was \$1,000 million.

In 2014, we entered into U.S. dollar fixed-for-floating interest rate swaps as part of our interest rate risk management strategy to create a balance of fixed and floating rate debt. These interest rate swaps are designated as fair value hedges. At December 31, 2015, we had outstanding interest rate swap agreements with notional amounts totaling \$2,000 million, maturing on April 15, 2019.

At December 31, 2015, after giving consideration to the \$2,000 million of fixed-rate debt that we have effectively converted to floating through these U.S. dollar fixed-for-floating interest rate swaps, approximately 72% of our debt portfolio, on a gross basis, incurred interest at a fixed-rate and the remaining 28% of the portfolio incurred interest at a variable-rate. We estimate that a 10% change in market interest rates as of December 31, 2015 would change the fair value of our interest rate swaps outstanding and would have had a resulting impact on our pretax income of approximately \$9 million. For additional information related to these interest rate swaps, see Note 14 to the Consolidated Financial Statements.

Variable-rate debt—Our variable rate debt consists of our \$2,000 million Senior Revolving Credit Facility, our \$900 million U.S. Receivables Securitization Facility, our €450 million European Receivables Securitization Facility and \$323 million outstanding at December 31, 2015 under our Commercial Paper Program. At December 31, 2015, there were no outstanding borrowings under our Senior Revolving Credit Facility and U.S. and European receivables facilities. We estimate that a 10% change in interest rates would not have had a material impact on earnings.

Item 8. Financial Statements and Supplementary Data.

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MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management of the Company, including the Chief Executive Officer and the Chief Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934, as amended. Internal control over financial reporting is a process designed by, or under the supervision of, our Chief Executive Officer and Chief Financial Officer, 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. Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

We conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2015 based on the Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013. Based on our evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2015.

The effectiveness of our internal control over financial reporting as of December 31, 2015 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Supervisory Board of Directors and Stockholders of LyondellBasell Industries N.V.

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, comprehensive income, stockholders' equity and cash flows present fairly, in all material respects, the financial position of LyondellBasell Industries N.V. and its subsidiaries at December 31, 2015 and December 31, 2014 and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2015 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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

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

/s/ PricewaterhouseCoopers LLP
Houston, Texas
February 16, 2016

LYONDELLBASELL INDUSTRIES N.V.
CONSOLIDATED STATEMENTS OF INCOME

<u>Millions of dollars, except earnings per share</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Sales and other operating revenues:			
Trade	\$31,930	\$44,714	\$43,052
Related parties	805	894	1,010
	32,735	45,608	44,062
Operating costs and expenses:			
Cost of sales	25,683	38,939	37,940
Selling, general and administrative expenses	828	806	870
Research and development expenses	102	127	150
	26,613	39,872	38,960
Operating income	6,122	5,736	5,102
Interest expense	(310)	(352)	(309)
Interest income	33	33	15
Other income (expense), net	25	38	(15)
	Income from continuing operations before equity investments and income taxes		
	5,870	5,455	4,793
Income from equity investments	339	257	203
	Income from continuing operations before income taxes		
	6,209	5,712	4,996
Provision for income taxes	1,730	1,540	1,136
	Income from continuing operations		
	4,479	4,172	3,860
Loss from discontinued operations, net of tax	(5)	(4)	(7)
Net income	4,474	4,168	3,853
Net loss attributable to non-controlling interests	2	6	4
Net income attributable to the Company shareholders	\$ 4,476	\$ 4,174	\$ 3,857
Earnings per share:			
Net income (loss) attributable to the Company shareholders—			
Basic:			
Continuing operations	\$ 9.63	\$ 8.04	\$ 6.81
Discontinued operations	(0.01)	(0.01)	(0.01)
	\$ 9.62	\$ 8.03	\$ 6.80
Diluted:			
Continuing operations	\$ 9.60	\$ 8.00	\$ 6.76
Discontinued operations	(0.01)	(0.01)	(0.01)
	\$ 9.59	\$ 7.99	\$ 6.75

See Notes to the Consolidated Financial Statements.

LYONDELLBASELL INDUSTRIES N.V.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Net income	\$4,474	\$ 4,168	\$3,853
Other comprehensive income (loss), net of tax –			
Financial derivatives:			
Gain (loss) on forward-starting interest rate swaps	17	(17)	—
Gain on cross-currency swaps	262	30	—
Reclassification adjustment included in net income	(207)	(89)	—
Income tax expense	<u>71</u>	<u>4</u>	<u>—</u>
Financial derivatives, net of tax	<u>1</u>	<u>(80)</u>	<u>—</u>
Unrealized loss on available-for-sale securities:			
Unrealized holding loss arising during the period	(6)	—	—
Income tax benefit	<u>(1)</u>	<u>—</u>	<u>—</u>
Unrealized loss on available-for-sale securities, net of tax	<u>(5)</u>	<u>—</u>	<u>—</u>
Defined pension and other postretirement benefit plans:			
Prior service cost arising during the period	—	5	(21)
Reclassification adjustment for amortization of prior service cost included in net income	5	—	14
Net actuarial gain (loss) arising during the period	(8)	(493)	411
Reclassification adjustment for net actuarial loss included in net income	28	7	30
Reclassification adjustment for settlement gain included in net income ...	<u>—</u>	<u>—</u>	<u>(3)</u>
Defined pension and other postretirement benefit plans, before tax	25	(481)	431
Income tax expense (benefit)	<u>4</u>	<u>(172)</u>	<u>149</u>
Defined pension and other postretirement benefit plans, net of tax	<u>21</u>	<u>(309)</u>	<u>282</u>
Foreign currency translations adjustments:			
Unrealized gain (loss) arising during the period	(434)	(733)	217
Reclassification adjustment included in net income	<u>—</u>	<u>—</u>	<u>4</u>
Foreign currency translations adjustments, before tax	(434)	(733)	221
Income tax benefit	<u>(5)</u>	<u>—</u>	<u>(4)</u>
Foreign currency translations, net of tax	<u>(429)</u>	<u>(733)</u>	<u>225</u>
Total other comprehensive income (loss)	<u>(412)</u>	<u>(1,122)</u>	<u>507</u>
Comprehensive income	4,062	3,046	4,360
Comprehensive loss attributable to non-controlling interests	<u>2</u>	<u>6</u>	<u>4</u>
Comprehensive income attributable to the Company shareholders	<u>\$4,064</u>	<u>\$ 3,052</u>	<u>\$4,364</u>

See Notes to the Consolidated Financial Statements.

LYONDELLBASELL INDUSTRIES N.V.
CONSOLIDATED BALANCE SHEETS

<u>Millions of dollars</u>	<u>December 31,</u>	
	<u>2015</u>	<u>2014</u>
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 924	\$ 1,031
Restricted cash	7	2
Short-term investments	1,064	1,593
Accounts receivable:		
Trade, net	2,363	3,226
Related parties	154	222
Inventories	4,051	4,517
Prepaid expenses and other current assets	1,226	1,054
Total current assets	9,789	11,645
Property, plant and equipment, net	8,991	8,758
Investments and long-term receivables:		
Investment in PO joint ventures	397	384
Equity investments	1,608	1,636
Other investments and long-term receivables	122	44
Goodwill	536	566
Intangible assets, net	640	769
Other assets	674	419
Total assets	\$22,757	\$24,221

See Notes to the Consolidated Financial Statements.

LYONDELLBASELL INDUSTRIES N.V.
CONSOLIDATED BALANCE SHEETS

<u>Millions of dollars, except shares and par value data</u>	December 31,	
	2015	2014
LIABILITIES AND EQUITY		
Current liabilities:		
Current maturities of long-term debt	\$ 4	\$ 4
Short-term debt	353	346
Accounts payable:		
Trade	1,627	2,239
Related parties	555	825
Accrued liabilities	1,810	1,554
Deferred income taxes	—	469
Total current liabilities	4,349	5,437
Long-term debt	7,671	6,695
Other liabilities	2,036	2,122
Deferred income taxes	2,127	1,623
Commitments and contingencies		
Stockholders' equity:		
Ordinary shares, €0.04 par value, 1,275 million shares authorized, 440,150,069 and 486,969,402 shares outstanding, respectively	31	31
Additional paid-in capital	10,202	10,387
Retained earnings	9,841	6,775
Accumulated other comprehensive income (loss)	(1,438)	(1,026)
Treasury stock, at cost, 138,285,201 and 91,463,729 ordinary shares, respectively	(12,086)	(7,853)
Total Company share of stockholders' equity	6,550	8,314
Non-controlling interests	24	30
Total equity	6,574	8,344
Total liabilities and equity	\$ 22,757	\$24,221

See Notes to the Consolidated Financial Statements.

LYONDELLBASELL INDUSTRIES N.V.
CONSOLIDATED STATEMENTS OF CASH FLOWS

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Cash flows from operating activities:			
Net income	\$ 4,474	\$ 4,168	\$ 3,853
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	1,047	1,019	1,021
Amortization of debt-related costs	16	20	21
Inventory valuation adjustment	548	760	—
Equity investments –			
Equity income	(339)	(257)	(203)
Distribution of earnings, net of tax	285	156	186
Deferred income taxes	181	177	(46)
Changes in assets and liabilities that provided (used) cash:			
Accounts receivable	780	358	(64)
Inventories	(240)	(205)	(151)
Accounts payable	(786)	(378)	275
Prepaid expenses and other current assets	(121)	156	(165)
Other, net	(3)	74	108
Net cash provided by operating activities	<u>5,842</u>	<u>6,048</u>	<u>4,835</u>
Cash flows from investing activities:			
Expenditures for property, plant and equipment	(1,440)	(1,499)	(1,561)
Payments for repurchase agreements	(397)	(425)	—
Proceeds from repurchase agreements	350	75	—
Purchases of available-for-sale securities	(2,073)	(3,439)	—
Proceeds from sales and maturities of available-for-sale securities	2,489	1,751	—
Change in restricted cash	(5)	8	(5)
Other, net	25	(2)	(36)
Net cash used in investing activities	<u>(1,051)</u>	<u>(3,531)</u>	<u>(1,602)</u>

See Notes to the Consolidated Financial Statements.

LYONDELLBASELL INDUSTRIES N.V.
CONSOLIDATED STATEMENTS OF CASH FLOWS—Continued

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Cash flows from financing activities:			
Repurchases of Company ordinary shares	(4,656)	(5,788)	(1,949)
Dividends paid	(1,410)	(1,403)	(1,127)
Issuance of long-term debt	984	992	1,472
Net proceeds from commercial paper	61	262	—
Payments of debt issuance costs	(16)	(18)	(23)
Other, net	<u>187</u>	<u>48</u>	<u>38</u>
Net cash used in financing activities	<u>(4,850)</u>	<u>(5,907)</u>	<u>(1,589)</u>
Effect of exchange rate changes on cash	<u>(48)</u>	<u>(29)</u>	<u>74</u>
Increase (decrease) in cash and cash equivalents	(107)	(3,419)	1,718
Cash and cash equivalents at beginning of period	<u>1,031</u>	<u>4,450</u>	<u>2,732</u>
Cash and cash equivalents at end of period	<u>\$ 924</u>	<u>\$ 1,031</u>	<u>\$ 4,450</u>
Supplemental Cash Flow Information:			
Interest paid	<u>\$ 310</u>	<u>\$ 343</u>	<u>\$ 266</u>
Net income taxes paid	<u>\$ 1,417</u>	<u>\$ 1,167</u>	<u>\$ 1,213</u>

See Notes to the Consolidated Financial Statements.

LYONDELLBASELL INDUSTRIES N.V.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

<u>Millions of dollars</u>	<u>Ordinary Shares</u>		<u>Additional Paid-in Capital</u>	<u>Retained Earnings</u>	<u>Accumulated Other Comprehensive Income (Loss)</u>	<u>Company Share of Stockholders' Equity</u>	<u>Non- Controlling Interests</u>
	<u>Issued</u>	<u>Treasury</u>					
Balance, December 31, 2012	\$ 31	\$ (106)	\$10,351	\$ 1,274	\$ (411)	\$11,139	\$ 40
Net income (loss)	—	—	—	3,857	—	3,857	(4)
Other comprehensive income . . .	—	—	—	—	507	507	—
Share-based compensation	—	20	31	—	—	51	—
Dividends (\$2.00 per share)	—	—	—	(1,127)	—	(1,127)	—
Repurchases of Company ordinary shares	—	(1,949)	—	—	—	(1,949)	—
Balance, December 31, 2013	\$ 31	\$ (2,035)	\$10,382	\$ 4,004	\$ 96	\$12,478	\$ 36
Net income (loss)	—	—	—	4,174	—	4,174	(6)
Other comprehensive income . . .	—	—	—	—	(1,122)	(1,122)	—
Share-based compensation	—	55	5	—	—	60	—
Dividends (\$2.70 per share)	—	—	—	(1,403)	—	(1,403)	—
Repurchases of Company ordinary shares	—	(5,873)	—	—	—	(5,873)	—
Balance, December 31, 2014	\$ 31	\$ (7,853)	\$10,387	\$ 6,775	\$(1,026)	\$ 8,314	\$ 30
Net income (loss)	—	—	—	4,476	—	4,476	(2)
Other comprehensive loss	—	—	—	—	(412)	(412)	—
Share-based compensation	—	382	(205)	—	—	177	—
Dividends (\$3.04 per share)	—	—	—	(1,410)	—	(1,410)	—
Repurchases of Company ordinary shares	—	(4,615)	—	—	—	(4,615)	—
Settlement from partner on exit from partnership	—	—	20	—	—	20	(4)
Balance, December 31, 2015	<u>\$ 31</u>	<u>\$(12,086)</u>	<u>\$10,202</u>	<u>\$ 9,841</u>	<u>\$(1,438)</u>	<u>\$ 6,550</u>	<u>\$ 24</u>

See Notes to the Consolidated Financial Statements.

LYONDELLBASELL INDUSTRIES N.V.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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LYONDELLBASELL INDUSTRIES N.V.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. Description of Company and Operations

LyondellBasell Industries N.V. is a limited liability company (*Naamloze Vennootschap*) incorporated under Dutch law by deed of incorporation dated October 15, 2009. Unless otherwise indicated, the “Company,” “we,” “us,” “our” or similar words are used to refer to LyondellBasell Industries N.V. together with its consolidated subsidiaries (“LyondellBasell N.V.”).

LyondellBasell Industries N.V. is the successor to the combination in December 2007 of Lyondell Chemical Company (“Lyondell Chemical”) and Basell AF S.C.A. (“Basell”), which created one of the world’s largest private petrochemical companies with significant worldwide scale and leading product positions.

LyondellBasell N.V. is a worldwide manufacturer of chemicals and polymers, a refiner of crude oil, a significant producer of gasoline blending components and a developer and licensor of technologies for the production of polymers.

2. Summary of Significant Accounting Policies

The following significant accounting policies were applied in the preparation of these Consolidated Financial Statements:

Basis of Preparation and Consolidation

The accompanying Consolidated Financial Statements have been prepared from the books and records of LyondellBasell N.V. under accounting principles generally accepted in the U.S. (“U.S. GAAP”). Subsidiaries are defined as being those companies over which we, either directly or indirectly, have control through a majority of the voting rights or the right to exercise control or to obtain the majority of the benefits and be exposed to the majority of the risks. Subsidiaries are consolidated from the date on which control is obtained until the date that such control ceases. All intercompany transactions and balances have been eliminated in consolidation.

The Consolidated Financial Statements have been prepared under the historical cost convention, as modified for the accounting of certain financial assets and financial liabilities (including derivative instruments) at fair value through profit or loss. Consolidated financial information, including subsidiaries, equity investments, has been prepared using uniform accounting policies for similar transactions and other events in similar circumstances.

Cash and Cash Equivalents

Cash equivalents consist of highly liquid debt instruments such as certificates of deposit, commercial paper and money market accounts. Cash equivalents include instruments with maturities of three months or less when acquired. Cash equivalents are stated at cost, which approximates fair value. Cash and cash equivalents exclude restricted cash. Our cash equivalents are placed in certificates of deposit, high-quality commercial paper and money market accounts with major international banks and financial institutions.

We have no requirements for compensating balances in a specific amount at a specific point in time. We maintain compensating balances for some of our banking services and products. Such balances are maintained solely at our discretion.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Short-Term Investments

We also have investments in marketable securities classified as available-for-sale. These securities, which are included in Short-term investments on the Consolidated Balance Sheets, are carried at estimated fair value with unrealized gains and losses recorded as a component of Accumulated other comprehensive income (“AOCI”). We periodically review our available-for-sale securities for other-than-temporary declines in fair value below the cost basis, and when events or changes in circumstances indicate the carrying value of an asset may not be recoverable, the investment is written down to fair value, establishing a new cost basis.

Trade Receivables

Trade receivables are amounts due from customers for merchandise sold or services performed in the ordinary course of business.

We calculate provisions for doubtful accounts receivable based on our estimates of amounts that we believe are unlikely to be collected. Collectability of receivables is reviewed and the provision calculated for doubtful accounts is adjusted at least quarterly, based on aging of specific accounts and other available information about the associated customers. Provisions for doubtful accounts are included in Selling, general and administrative expenses.

Inventories

Inventories are carried at the lower of current market value or cost. Cost is determined using the last-in, first-out (“LIFO”) method for raw materials, work in progress (“WIP”) and finished goods, and the moving average cost method for materials and supplies.

Inventory exchange transactions, which involve fungible commodities, are not accounted for as purchases and sales. Any resulting volumetric exchange balances are accounted for as inventory, with cost determined using the LIFO method.

Property, Plant and Equipment

Property, plant and equipment are recorded at historical cost. Historical cost includes expenditures that are directly attributable to the acquisition of the items. Costs may also include borrowing costs incurred on debt during construction or major projects exceeding one year, costs of major maintenance arising from turnarounds of major units relating to betterments and committed decommission costs. Routine maintenance costs are expensed as incurred. Land is not depreciated. Depreciation is computed using the straight-line method over the estimated useful asset lives to their residual values.

The assets’ residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

We evaluate property, plant and equipment for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Long-lived assets are grouped at the lowest level for which there are identifiable cash flows that are largely independent of the cash flows of other groups of assets, which, for us, is generally at the plant group level (or, at times, individual plants in certain circumstances where we have isolated production units with separately identifiable cash flows). When it is probable that an asset or asset group’s undiscounted future cash flows will not be sufficient to recover the carrying amount, the asset is written down to its estimated fair value.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Upon retirement or sale, we remove the cost of the asset and the related accumulated depreciation from the accounts and reflect any resulting gain or loss in the Consolidated Statements of Income.

Equity Investments

We account for equity investments using the equity method of accounting if we have the ability to exercise significant influence over, but not control of, an investee. Significant influence generally exists if we have an ownership interest representing between 20% and 50% of the voting rights. Under the equity method of accounting, investments are stated initially at cost and are adjusted for subsequent additional investments and our proportionate share of profit or losses and distributions.

We record our share of the profits or losses of the equity method investments, net of income taxes, in the Consolidated Statements of Income. When our share of losses in an equity investment equals or exceeds our interest in the equity investment, including any other unsecured receivables, we do not recognize further losses, unless we have incurred obligations or made payments on behalf of the equity investment.

We evaluate our equity method investments for impairment when events or changes in circumstances indicate, in management's judgment, that the carrying value of such investments may have experienced an other-than-temporary decline in value. When evidence of loss in value has occurred, management compares the estimated fair value of investment to the carrying value of investment to determine whether an impairment has occurred. If the estimated fair value is less than the carrying value and management considers the decline in value to be other-than temporary, the excess of the carrying value over the estimated fair value is recognized in the Consolidated Financial Statements as an impairment.

Goodwill

We recorded goodwill upon our application of fresh-start accounting on May 1, 2010. Goodwill is not amortized, but is tested for impairment. We assess the recoverability of the carrying value of goodwill during the fourth quarter of each year or whenever events or changes in circumstances indicate that the carrying amount of the goodwill of a reporting unit may not be fully recoverable.

We first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. Qualitative factors assessed for each of the reporting units include, but are not limited to, changes in long-term commodity prices, discount rates, competitive environments, planned capacity, cost factors such as raw material prices, and financial performance of the reporting units. If the qualitative assessment indicates that it is more likely than not that the carrying value of a reporting unit exceeds its estimated fair value, a two-step quantitative test is required.

For 2015, management performed qualitative impairment assessments of our reporting units which indicated that the fair value of our reporting units was greater than their carrying value. Accordingly, a quantitative two-step goodwill impairment test was not required and no goodwill impairment was recognized. For 2014, management voluntarily performed a quantitative two-step goodwill impairment test for all reporting units. The results of step one of the quantitative impairment test indicated that the fair value of each of our reporting units was substantially in excess of their carrying value.

Intangible Assets

Intangible Assets—Intangible assets primarily consist of emission allowances, various contracts, in-process research and development and software costs. These assets are amortized using the straight-line method over

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

their estimated useful lives or over the term of the related agreement, if shorter. We evaluate definite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying value of the asset may not be recoverable.

Research and Development—Research and development (“R&D”) costs are expensed when incurred. Subsidies for research and development are included in Other income (expense), net. Depreciation expense related to R&D assets is included as a cost of R&D.

Income Taxes

The income tax for the period comprises current and deferred tax. Income tax is recognized in the Consolidated Statements of Income, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In these cases, the applicable tax amount is recognized in other comprehensive income or directly in equity, respectively.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, as well as the net tax effects of net operating loss carryforwards. Valuation allowances are provided against deferred tax assets when it is more likely than not that some portion or all of the deferred tax asset will not be realized.

We recognize uncertain income tax positions in our financial statements when we believe it is more likely than not, based on the technical merits, that the position or a portion thereof will be sustained upon examination.

Employee Benefits

Pension Plans—We have both defined benefit (funded and unfunded) and defined contribution plans. For the defined benefit plans, a projected benefit obligation is calculated annually by independent actuaries using the projected unit credit method. Pension costs primarily represent the increase in the actuarial present value of the obligation for pension benefits based on employee service during the year and the interest on this obligation in respect of employee service in previous years, net of expected return on plan assets.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to equity and are reflected in Accumulated other comprehensive income in the period in which they arise.

Other Post-Employment Obligations—Certain employees are entitled to postretirement medical benefits upon retirement. The entitlement to these benefits is usually conditional on the employee remaining in service up to retirement age and the completion of a minimum service period. The expected costs of these benefits are accrued over the period of employment applying the same accounting methodology used for defined benefit plans.

Termination Benefits—Contractual termination benefits are payable when employment is terminated due to an event specified in the provisions of a social/labor plan or statutory law. A liability is recognized for one time termination benefits when we are committed to i) make payments and the number of affected employees and the benefits received are known to both parties, and ii) terminating the employment of current employees according to a detailed formal plan without possibility of withdrawal and can reasonably estimate such amount. Benefits falling due more than 12 months after the balance sheet date are discounted to present value.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Other Provisions

Environmental Remediation Costs—Environmental remediation liabilities include liabilities related to sites we currently own, sites we no longer own, as well as sites where we have operated that belong to other parties. Liabilities for anticipated expenditures related to investigation and remediation of contaminated sites are accrued when it is probable a liability has been incurred and the amount of the liability can be reasonably estimated. Only ongoing operating and monitoring costs, the timing of which can be determined with reasonable certainty, are discounted to present value. Future legal costs associated with such matters, which generally are not estimable, are not included in these liabilities.

Asset Retirement Obligations—At some sites, we are contractually obligated to decommission our plants upon site exit. Asset retirement obligations are recorded at the present value of the estimated costs to retire the asset at the time the obligation is incurred. That cost, which is capitalized as part of the related long-lived asset, is depreciated on a straight-line basis over the useful life of the related asset. Accretion expense in connection with the discounted liability is also recognized over the useful life of the related asset. Such depreciation and accretion expenses are included in Cost of sales.

Foreign Currency Translation

Functional and Reporting Currency—Items included in the financial information of each of LyondellBasell N.V.'s entities are measured using the currency of the primary economic environment in which the entity operates (“the functional currency”) and then translated to the U.S. dollar reporting currency through Other comprehensive income.

Transactions and Balances—Foreign currency transactions are translated into the functional currency using exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognized in the Consolidated Statements of Income.

In the Consolidated Financial Statements, the results and financial position of all subsidiaries that have a functional currency different from the presentation currency are translated into the reporting currency as follows:

1. Assets and liabilities for each balance sheet presented are translated at the closing rate at the date of that balance sheet;
2. Income and expenses for each income statement are translated at average exchange rates; and
3. All resulting exchange differences are recognized as a separate component within Other comprehensive income (foreign currency translation).

Revenue Recognition

Substantially all of the Company's revenue is derived from product sales. Revenues are recognized when sales are realized or realizable, and the earnings process is complete. Revenue from product sales is recognized when the price is fixed or determinable, collectability is reasonably assured, and the customer has an obligation to pay at the time of transfer of title and risk of loss to the customer, which usually occurs at the time of shipment. Revenue is recognized at the time of delivery if we retain the risk of loss during shipment.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Share-Based Compensation

The Company grants stock-based compensation awards that vest over a specified period upon employees meeting certain service criteria. The fair value of equity instruments issued to employees is measured on the grant date and is recognized over the vesting period.

Contingent share awards are recognized ratably over the vesting period as a liability and re-measured, at fair value, at the balance sheet date.

Leases

We lease land and other assets for use in our operations. All lease agreements are evaluated and classified as either an operating lease or a capital lease. A lease is classified as a capital lease if any of the following criteria are met: transfer of ownership to the lessee by the end of the lease term; the lease contains a bargain purchase option; the lease term is equal to 75% or greater of the asset's useful economic life; or the present value of the future minimum lease payments is equal to or greater than 90% of the asset's fair market value. Capital leases are recorded at the lower of the net present value of the total amount of rent payable under the leasing agreement (excluding finance charges) or fair market value of the leased asset. Capital lease assets are depreciated on a straight-line basis, over a period consistent with our normal depreciation policy for tangible fixed assets, but generally not exceeding the lease term. Operating lease expense is recognized ratably over the entire lease term.

Derivative Financial Instruments and Hedging Activities

We selectively enter into derivative transactions to manage volatility related to market risks associated with changes in commodity pricing, currency exchange rates and interest rates. We categorize assets and liabilities, measured at fair value, into one of three different levels depending on the observability of the inputs employed in the measurement. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are observable inputs other than quoted prices included within Level 1 for the asset or liability, either directly or indirectly through market corroborated inputs. Level 3 inputs are unobservable inputs for the asset or liability reflecting significant modifications to observable related market data or our assumptions about pricing by market participants. For a discussion related to financial instruments and derivatives policies, see Note 14.

Non-Controlling Interests

Non-controlling interests primarily represent the interests of a subsidiary owning an equity investment in Al-Waha Petrochemicals Ltd.

Use of Estimates

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

Reclassifications

Certain previously reported amounts have been reclassified upon our adoption of ASU 2015-03, *Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs*, ASU 2015-15, *Interest—Imputation of Interest (Subtopic 835-30): Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements* and ASU 2015-17, *Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes*.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Recently Adopted Guidance

Discontinued Operations—In April 2014, the Financial Accounting Standards Board (“FASB”) issued Accounting Standard Update (“ASU”) 2014-08, *Presentation of Financial Statements (Topic 205) and Property, Plant, and Equipment (Topic 360): Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity*. The amendments in this ASU revise the criteria for reporting discontinued operations. Under this new guidance, only disposals representing a strategic shift in operations that have or will have a major effect on a company’s operations should be presented as discontinued operations. Additional disclosures about the assets, liabilities, income and expenses of discontinued operations will also be required. Prospective application of this ASU is required for public entities for annual and interim periods beginning on or after December 15, 2014 and early adoption is permitted. Our early adoption of this amendment did not have any impact on the presentation of our Consolidated Financial Statements.

Repurchase Agreements—In June 2014, the FASB issued ASU 2014-11, *Transfers and Servicing (Topic 860): Repurchase-to-Maturity Transactions, Repurchase Financings, and Disclosure*, which changes the accounting for repurchase-to-maturity transactions and other similar transactions. The amendments in this ASU require repurchase-to-maturity transactions to be accounted for as secured borrowings rather than as sales with forward repurchase commitments. In addition, this ASU requires new and expanded disclosures about repurchase agreements and other similar transactions. The amendments in this update were effective for interim and annual periods beginning after December 15, 2014. The adoption of this amendment had no impact on our Consolidated Financial Statements.

Extraordinary and Unusual Items—In January 2015, the FASB issued ASU 2015-01, *Income Statement—Extraordinary and Unusual Items (Subtopic 225-20): Simplifying Income Statement Presentation by Eliminating the Concept of Extraordinary Items*, which eliminates the concept of extraordinary items. Under this new guidance, entities will no longer be required to separately classify, present and disclose extraordinary events and transactions. The amendments in this update are effective for annual and interim periods beginning after December 15, 2015 and early adoption is permitted. Our early adoption of this amendment did not have any impact on the presentation of our Consolidated Financial Statements.

Debt Issuance Costs—In April 2015, the FASB issued ASU 2015-03, *Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs*. Under this new guidance, entities are required to present debt issuance costs related to a recognized debt liability in the balance sheet as a direct deduction from the carrying amount of that debt, consistent with the current treatment of debt discounts. Additionally, in August 2015, the FASB issued ASU 2015-15, *Interest—Imputation of Interest (Subtopic 835-30): Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements*, which clarifies the guidance in ASU 2015-03 related to debt issuance costs incurred in connection with line-of-credit arrangements. Under ASU 2015-15, entities are allowed to defer and present debt issuance costs as an asset and subsequently amortize those costs over the term of the line-of-credit arrangements. The amendments in these updates require retrospective application and are effective for annual and interim periods beginning after December 15, 2015 with early adoption permitted. Our early adoption of these amendments did not have a material impact on our Consolidated Financial Statements.

Fair Value Measurement—In May 2015, the FASB issued ASU 2015-07, *Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent)*. The amendments in this ASU eliminate the requirement for investments measured using the net asset value per share practical expedient to be categorized in the fair value hierarchy. Additionally, reporting entities will no longer be required to make certain disclosures for investments that are eligible to be measured at fair value using the net asset value per share practical expedient. The amendments in this update are to be applied retrospectively and are

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

effective for annual and interim periods beginning after December 15, 2015 with early adoption permitted. Our early adoption of this amendment did not have a material impact on our Consolidated Financial Statements.

Deferred Taxes—In November 2015, the FASB issued ASU 2015-17, *Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes*. The amendments in this ASU eliminate the current requirement for entities to present deferred taxes as a net current asset or liability and net noncurrent asset or liability. Under the new guidance, all deferred tax assets and liabilities, along with the related valuation allowances, should be classified as noncurrent on the balance sheet. The amendments in this update may be applied either prospectively or retrospectively and is effective for annual and interim periods beginning after December 15, 2016 with early adoption permitted. Our early, prospective, adoption of this amendment did not have a material impact on our Consolidated Financial Statements.

Accounting Guidance Issued But Not Adopted as of December 31, 2015

Revenue Recognition—In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)*, which supersedes the current revenue recognition requirements in Accounting Standard Codification (“ASC”) 606, *Revenue Recognition*. Under this guidance, entities should recognize revenues to depict the transfer of promised goods or services to customers in an amount that reflects the consideration the entity expects to receive in exchange for those goods or services. This ASU also requires enhanced disclosures. In August 2015, the FASB issued ASU 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, which deferred the original effective date for one year to annual and interim periods beginning after December 15, 2017. Retrospective and modified retrospective application is allowed. We are currently assessing the impact of this amendment on our Consolidated Financial Statements.

Compensation—In June 2014, the FASB issued ASU 2014-12, *Stock Compensation (Topic 718): Accounting for Share-Based Payments When the Terms of an Award Provide That a Performance Target Could Be Achieved after the Requisite Service Period*. Under this new guidance, entities are required to treat performance targets that affect vesting and could be achieved after the requisite service period as a performance condition. The amendments in this ASU are effective for annual and interim periods beginning after December 15, 2015. Early adoption is permitted. The application of this amendment is not expected to have a material impact on our Consolidated Financial Statements.

Going Concern—In August 2014, the FASB issued ASU 2014-15, *Presentation of Financial Statements-Going Concern (Subtopic 205-40): Disclosure of Uncertainties about an Entity’s Ability to Continue as a Going Concern*. Under this new guidance, management is required to perform interim and annual assessments of an entity’s ability to continue as a going concern within one year of the date the financial statements are issued (or available to be issued when applicable). Additionally, the entity must provide certain disclosures if conditions or events raise substantial doubt about its ability to continue as a going concern. The amendments in this update are effective for annual periods ending after December 15, 2016 and interim periods thereafter. Early adoption is permitted. The application of this amendment is not expected to have a material impact on our Consolidated Financial Statements.

Consolidation—In February 2015, the FASB issued ASU 2015-02, *Consolidation (Topic 810): Amendments to the Consolidation Analysis*, which amends and changes the consolidation analysis currently required under U.S. GAAP. This ASU modifies the process used to evaluate whether limited partnerships and similar entities are variable interest entities (“VIEs”) or voting interest entities; affects the analysis performed by reporting entities regarding VIEs, particularly those with fee arrangements and related party relationships; and provides a scope exception for certain investment funds. The amendments in this update are effective for annual and interim

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periods beginning after December 15, 2015. Early adoption is permitted. The application of this amendment is not expected to have a material impact on our Consolidated Financial Statements.

Inventories—In July 2015, the FASB issued ASU 2015-11, *Inventory (Topic 330): Simplifying the Measurement of Inventory*. Under this new guidance, entities that measure inventory using any method other than last-in, first-out or the retail inventory method will be required to measure inventory at the lower of cost and net realizable value. The amendments in this ASU, which should be applied prospectively, are effective for annual and interim periods beginning after December 15, 2016. Early adoption is permitted. The application of this amendment is not expected to have a material impact on our Consolidated Financial Statements.

Financial Instruments—In January 2016, the FASB issued ASU 2016-01, *Financial Instruments-Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*. The new guidance in this ASU includes a requirement for equity investments (except those accounted for under the equity method of accounting or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income. Prospective application of this ASU is required for public entities for annual and interim periods beginning on or after December 15, 2017. Early adoption is permitted for the ‘own credit’ provision. We are currently assessing the impact of this new guidance on our Consolidated Financial Statements.

3. Discontinued Operations

In September 2011, we reported that the management of certain of our indirect subsidiaries intended to initiate consultations with their works councils on the probable cessation of refinery operations at our refinery in Berre and of the associated refined products business. In connection with the intended closure, we recorded pretax charges totaling \$136 million in the fourth quarter of 2011, primarily related to the estimated cost of the social plan for the affected employees. In 2013, we reduced the estimated cost of the social plan by \$5 million.

On January 4, 2012, these operations were suspended in accordance with an agreement with the relevant works councils. Notwithstanding the suspension of the operations and the recording of the charges related to the costs of the social plan for employees and inventory write-downs, we began reporting the Berre refinery as a discontinued operation in the second quarter of 2012. Our determination that the Berre refinery met the definition of a “discontinued operation” in the second quarter of 2012 was based on (i) the ongoing cash flows of the refinery, which became insignificant in the second quarter of 2012 as residual inventory from the refinery was liquidated, and (ii) we and our subsidiaries ceasing to have any significant continuing involvement in the operations of the refinery during the second quarter of 2012.

The amounts included in Loss from discontinued operations of the Berre refinery are summarized as follows:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Sales and other operating revenues	\$ 1	\$ 1	\$ 9
Loss from discontinued operations before income taxes	\$(12)	\$(7)	\$(13)
Benefit from income taxes	(7)	(3)	(6)
Loss from discontinued operations, net of tax	\$ (5)	\$(4)	\$ (7)

Losses from discontinued operations for 2013 include benefits related to the liquidation of LIFO-valued inventory of \$9 million.

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Future cash outflows will occur for exit or disposal activities and for payments made to severed employees. Exit and disposal costs are expected to be incurred through the end of 2017. Payments to the affected employees are expected to be substantially complete by 2019. There is uncertainty in the manner, scope and timing of potential future asset disposal or dismantlement activities and their related cash flows. Although some dismantling and remediation activities may be considered or required at a future date, the amounts associated with such activities are not determinable at this time due to such uncertainties.

The following table summarizes the changes in the social plan accrual for employees affected by the closure of the Berre refinery at December 31:

<u>Millions of dollars</u>	<u>2015</u>	<u>2014</u>
Beginning balance	\$ 26	\$ 42
Accretion expense	—	2
Cash payments	(8)	(13)
Adjustment for change in estimates	(2)	—
Additions	10	—
Effect of exchange rate changes	(3)	(5)
Ending balance	<u>\$ 23</u>	<u>\$ 26</u>

There are no significant assets or liabilities related to the Berre refinery other than those discussed above.

4. Related Party Transactions

We have related party transactions with affiliates of one of our major shareholders, Access Industries (“Access”) and with the Company’s joint venture partners (see Notes 8 and 9). We also had related party transactions with affiliates of Apollo Management LLC (“Apollo”), who was a significant shareholder of the Company until the third quarter of 2013.

Access—In December 2010, we entered into a tax cooperation agreement with Access which terminated on December 31, 2014. The tax cooperation agreement allowed either party to provide the other with information and support in connection with tax return preparation and audits on a time and materials basis through 2014. No payments were made to or received from Access under this agreement during 2014 and 2013.

In December 2010, one of our subsidiaries received demand letters from affiliates of Access demanding (i) indemnity for losses, including attorney’s fees and expenses, arising out of a pending lawsuit and (ii) payment of (a) \$100 million in management fees under a 2007 management agreement between an Access affiliate and the predecessor of LyondellBasell AF and (b) other unspecified amounts related to advice purportedly given in connection with financing and other strategic transactions. For additional information related to this matter, see Note 19.

Apollo—Transactions with Apollo affiliates include the sales of product under a long-term contract that renews automatically each year, unless a 90 day notice of termination has been received, and other product sales made on the spot market in the ordinary course of business.

Joint Venture Partners—We have related party transactions with our equity investees. These related party transactions include the sales and purchases of goods in the normal course of business as well as certain financing arrangements. In addition, under contractual arrangements with certain of our equity investees, we

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receive certain services, utilities and materials at some of our manufacturing sites and we provide certain services to our equity investees.

We have guaranteed \$23 million of the indebtedness of one of our joint ventures as of December 31, 2015. In 2015 and 2013, we received payments totaling \$19 million and \$9 million, respectively, for loans made to our joint ventures. The \$19 million repayment was related to a loan made to Al-Waha Petrochemicals Ltd. in 2010 and the \$9 million repayment was for a loan made to Saudi Ethylene & Polyethylene Company Ltd. in 2006.

Related party transactions are summarized as follows:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
The Company billed related parties for:			
Sales of products —			
Apollo affiliates	\$ —	\$ —	\$ 224
Joint venture partners	805	894	786
Shared service agreements —			
Apollo affiliates	—	—	7
Joint venture partners	19	18	19
Related parties billed the Company for:			
Sales of products —			
Joint venture partners	2,831	3,507	3,340
Shared service agreements —			
Joint venture partners	73	85	94

5. Accounts Receivable

We sell our products primarily to other industrial concerns in the petrochemicals and refining industries. We perform ongoing credit evaluations of our customers' financial conditions and, in certain circumstances, require letters of credit or corporate guarantees from them. Our allowance for doubtful accounts receivable, which is reflected in the Consolidated Balance Sheets as a reduction of accounts receivable, was \$24 million and \$29 million at December 31, 2015 and 2014, respectively. We recorded provisions for doubtful accounts receivable, which are reflected in the Consolidated Statements of Income, of less than \$1 million, \$1 million and \$14 million in 2015, 2014 and 2013, respectively. In 2014, we wrote off approximately \$10 million of accounts receivable reserved in prior years.

6. Inventories

Inventories consisted of the following components at December 31:

<u>Millions of dollars</u>	<u>2015</u>	<u>2014</u>
Finished goods	\$2,668	\$3,011
Work-in-process	148	212
Raw materials and supplies	<u>1,235</u>	<u>1,294</u>
Total inventories	<u>\$4,051</u>	<u>\$4,517</u>

At December 31, 2015 and 2014, approximately 87% and 88%, respectively, of our inventories were valued using the last in, first out (“LIFO”) method and the remaining inventory, consisting primarily of materials and

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

supplies, was valued at the moving average cost method. At December 31, 2015 and 2014, our LIFO cost exceeded current replacement cost under the first-in first-out method. The excess of our inventories at estimated net realizable value over LIFO cost after lower of cost or market charges was approximately \$73 million and \$270 million at December 31, 2015 and 2014, respectively.

For information related to lower of cost or market inventory valuation charges recognized during 2015, see Note 22.

7. Property, Plant and Equipment, Goodwill and Intangible Assets

Property, Plant and Equipment—The components of property, plant and equipment, at cost, and the related accumulated depreciation are as follows at December 31:

<u>Millions of dollars</u>	<u>Estimated Useful Lives (in Years)</u>	<u>2015</u>	<u>2014</u>
Land		\$ 283	\$ 297
Major manufacturing equipment	25	7,718	7,268
Buildings	30	672	628
Light equipment and instrumentation	5-20	1,689	1,467
Office furniture	15	13	15
Major turnarounds	4-7	1,209	1,185
Information system equipment	3-5	54	47
Construction in progress		1,272	1,143
Total property, plant and equipment		12,910	12,050
Less accumulated depreciation		(3,919)	(3,292)
Property, plant and equipment, net		<u>\$ 8,991</u>	<u>\$ 8,758</u>

Intangible Assets—The components of identifiable intangible assets, at cost, and the related accumulated amortization are as follows at December 31:

<u>Millions of dollars</u>	<u>2015</u>			<u>2014</u>		
	<u>Cost</u>	<u>Accumulated Amortization</u>	<u>Net</u>	<u>Cost</u>	<u>Accumulated Amortization</u>	<u>Net</u>
In-process research and development costs	\$ 104	\$ (46)	\$ 58	\$ 119	\$ (44)	\$ 75
Emission allowances	687	(359)	328	730	(330)	400
Various contracts	525	(285)	240	542	(269)	273
Software costs	83	(69)	14	104	(83)	21
Total intangible assets	<u>\$1,399</u>	<u>\$(759)</u>	<u>\$640</u>	<u>\$1,495</u>	<u>\$(726)</u>	<u>\$769</u>

Amortization of these identifiable intangible assets for the next five years is expected to be \$106 million in 2016, \$104 million in 2017, \$99 million in 2018, \$98 million in 2019 and \$87 million in 2020.

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Depreciation and Amortization Expense—Depreciation and amortization expense is summarized as follows:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Property, plant and equipment	\$ 875	\$ 865	\$ 854
Investment in PO joint ventures	28	29	32
Emission allowances	97	69	68
Various contracts	32	38	47
In-process research and development costs	8	10	9
Software costs	7	8	11
Total depreciation and amortization	<u>\$1,047</u>	<u>\$1,019</u>	<u>\$1,021</u>

Asset Retirement Obligations—In certain cases, we are contractually obligated to decommission our plants upon site exit. In such cases, we have accrued the net present value of the estimated costs. The majority of our asset retirement obligations are related to facilities in Europe. The changes in our asset retirement obligations are as follows:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>	
	<u>2015</u>	<u>2014</u>
Beginning balance	\$88	\$92
Provisions	1	2
Payments	(1)	(4)
Changes in estimates	1	4
Accretion expense	3	3
Effects of exchange rate changes	(9)	(9)
Ending balance	<u>\$83</u>	<u>\$88</u>

We believe that there are asset retirement obligations associated with some of our other facilities, but the present value of those obligations is not material in the context of an indefinite expected life of the facilities. We continually review the optimal future alternatives for our facilities. Any decision to retire one or more facilities may result in an increase in the present value of such obligations.

Goodwill—Goodwill was \$536 million at December 31, 2015, \$566 million at December 31, 2014 and \$605 million at December 31, 2013. All movements were due to foreign exchange impacts.

8. Investment in PO Joint Ventures

We, together with Covestro AG and Bayer Corporation (collectively “Covestro”), share ownership in a U.S. propylene oxide (“PO”) manufacturing joint venture (the “U.S. PO joint venture”). The U.S. PO joint venture owns a PO/styrene monomer (“SM” or “styrene”) and a PO tertiary butyl alcohol (“TBA”) manufacturing facility. Covestro’s ownership interest represents an undivided interest in certain U.S. PO joint venture assets with correlative PO capacity reservation that resulted in ownership of annual in-kind cost-based PO production of 1.5 billion pounds in 2015 and 2014. We take in kind the remaining cost-based PO and co-product production.

In addition, we and Covestro each have a 50% interest in a separate manufacturing joint venture (the “European PO joint venture”), which owns a PO/SM plant at Maasvlakte near Rotterdam, The Netherlands. In substance, each partner’s ownership interest represents an undivided interest in all of the European PO joint venture assets with correlative capacity reservation that resulted in ownership of annual in-kind cost-based PO and SM production.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

We and Covestro do not share marketing or product sales under the U.S. PO joint venture. We operate the U.S. PO joint venture's and the European PO joint venture's (collectively the "PO joint ventures") plants and arrange and coordinate the logistics of product delivery. The partners share in the cost of production and logistics is based on their product offtake.

We account for both the U.S. PO joint venture and the European PO joint venture using the equity method. We report the cost of our product offtake as inventory and equity loss as cost of sales in our Consolidated Financial Statements. Related production cash flows are reported in the operating cash flow section of the Consolidated Statements of Cash Flows.

Our equity investment in the PO joint ventures represents our share of the manufacturing plants and is decreased by recognition of our share of equity loss, which is equal to the depreciation and amortization of the assets of the PO joint ventures. Other changes in the investment balance are principally due to our additional capital contributions to the PO joint ventures to fund capital expenditures. Such contributions are reported in the investing cash flow section of the Consolidated Statements of Cash Flows.

Our product offtake was 6,270 million, 5,878 million and 4,986 million of pounds of PO and its co-products for the years ended December 31, 2015, 2014 and 2013, respectively.

Changes in our investments in the U.S. and European PO joint ventures for 2015 and 2014 are summarized below:

<u>Millions of dollars</u>	<u>U.S. PO Joint Venture</u>	<u>European PO Joint Venture</u>	<u>Total PO Joint Ventures</u>
Investments in PO joint ventures—January 1, 2015	\$259	\$125	\$384
Cash contributions	(1)	(2)	(3)
Prior years adjustment related to capital expenditures previously reported in property, plant and equipment	57	—	57
Depreciation and amortization	(19)	(9)	(28)
Effect of exchange rate changes	—	(13)	(13)
Investments in PO joint ventures—December 31, 2015	<u>\$296</u>	<u>\$101</u>	<u>\$397</u>
Investments in PO joint ventures—January 1, 2014	\$269	\$152	\$421
Cash contributions	9	1	10
Depreciation and amortization	(19)	(10)	(29)
Effect of exchange rate changes	—	(18)	(18)
Investments in PO joint ventures—December 31, 2014	<u>\$259</u>	<u>\$125</u>	<u>\$384</u>

In 2015, we reclassified a total of \$57 million related to cash contributions in prior years associated with turnaround and other investment activities that were previously classified in property, plant and equipment.

9. Equity Investments

Our PO joint ventures, which are also accounted for using the equity method of accounting, are discussed in Note 8 to the accompanying Consolidated Financial Statements and are, therefore, not included in the following discussion.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Our remaining direct and indirect equity investments are as follows at December 31:

<u>Percent of Ownership</u>	<u>2015</u>	<u>2014</u>
Basell Orlen Polyolefins Sp. Z.o.o.	50.00%	50.00%
PolyPacific Pty. Ltd.	50.00%	50.00%
SunAllomer Ltd.	50.00%	50.00%
Saudi Polyolefins Company	25.00%	25.00%
Saudi Ethylene & Polyethylene Company Ltd.	25.00%	25.00%
Al-Waha Petrochemicals Ltd.	20.95%	20.95%
PolyMirae Co. Ltd.	42.59%	42.59%
HMC Polymers Company Ltd.	28.56%	28.56%
Indelpro S.A. de C.V.	49.00%	49.00%
Ningbo ZRCC Lyondell Chemical Co. Ltd.	26.65%	26.65%
Ningbo ZRCC Lyondell Chemical Marketing Co.	50.00%	50.00%
NOC Asia Ltd.	40.00%	40.00%
Geosel	27.00%	27.00%

The changes in our equity investments are as follows:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>	
	<u>2015</u>	<u>2014</u>
Beginning balance	\$1,636	\$1,629
Income from equity investments	339	257
Distribution of earnings, net of tax	(285)	(156)
Currency exchange effects	(63)	(94)
Other	(19)	—
Ending balance	<u>\$1,608</u>	<u>\$1,636</u>

The subsidiary that holds the Company's equity interest in Al-Waha Petrochemicals Ltd. has a minority shareholder, which holds 16.21% of its equity. The equity interest held by the minority shareholder can be called by the Company or can be put to the Company by the minority interest shareholder at any time. The price of the call option is the nominal value of the shares (initial \$18 million investment) plus accrued interest based on LIBOR plus 40 basis points, less paid dividends. The price of the put option is €1 plus the minority shareholder's undistributed pro-rata earnings. As of December 31, 2015 and 2014, the put would have a minimal redemption amount and the call could be redeemed for \$21 million and \$22 million, respectively, the value of the initial investment plus accrued interest.

Summarized balance sheet information and our share of the Company's investments accounted for under the equity method are as follows at December 31:

<u>Millions of dollars</u>	<u>2015</u>		<u>2014</u>	
	<u>100%</u>	<u>Company Share</u>	<u>100%</u>	<u>Company Share</u>
Current assets	\$2,750	\$ 926	\$3,069	\$1,030
Noncurrent assets	5,032	1,485	5,298	1,728
Total assets	7,782	2,411	8,367	2,758
Current liabilities	2,153	680	2,433	791
Noncurrent liabilities	1,963	549	2,208	615
Net assets	<u>\$3,666</u>	<u>\$1,182</u>	<u>\$3,726</u>	<u>\$1,352</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Summarized income statement information and our share of the Company's investments accounted for under the equity method are set forth below:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>					
	<u>2015</u>		<u>2014</u>		<u>2013</u>	
	<u>100%</u>	<u>Company Share</u>	<u>100%</u>	<u>Company Share</u>	<u>100%</u>	<u>Company Share</u>
Revenues	\$ 8,017	\$ 2,618	\$ 9,824	\$ 3,177	\$11,017	\$ 3,565
Cost of sales	(6,370)	(2,113)	(8,366)	(2,744)	(9,526)	(3,152)
Gross profit	1,647	505	1,458	433	1,491	413
Net operating expenses	(196)	(56)	(220)	(70)	(246)	(83)
Operating income	1,451	449	1,238	363	1,245	330
Interest income	7	2	6	3	5	2
Interest expense	(66)	(18)	(83)	(46)	(97)	(75)
Foreign currency translation	(29)	(9)	(13)	(4)	(2)	(1)
Other income (expense), net	44	11	27	8	25	7
Income before income taxes	1,407	435	1,175	324	1,176	263
Provision for income taxes	(299)	(96)	(229)	(67)	(229)	(50)
Net income	<u>\$ 1,108</u>	<u>\$ 339</u>	<u>\$ 946</u>	<u>\$ 257</u>	<u>\$ 947</u>	<u>\$ 213</u>

The difference between our carrying value and the underlying equity in the net assets of our equity investments are assigned to the investment's assets and liabilities based on an analysis of the factors giving rise to the basis difference. The amortization of the basis difference is included in Income from equity investments in the Consolidated Statements of Income.

10. Prepaid Expenses and Other Current Assets and Other Assets

The components of Prepaid expenses and other current assets were as follows at December 31:

<u>Millions of dollars</u>	<u>2015</u>	<u>2014</u>
Repurchase agreements	\$ 289	\$ 350
Renewable identification numbers	301	198
Advances to suppliers	54	66
Income taxes	315	126
VAT receivables	113	76
Deferred tax assets	—	67
Prepaid insurance	33	42
Other taxes	12	16
Other	109	113
Total prepaid expenses and other current assets	<u>\$1,226</u>	<u>\$1,054</u>

For information related to our repurchase agreements, see Note 14. The renewable identification numbers reflected above represent a U.S. government established credit used to show compliance in meeting the Environmental Protection Agency's Renewable Fuel Standard.

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The components of Other assets were as follows at December 31:

<u>Millions of dollars</u>	<u>2015</u>	<u>2014</u>
Deferred tax assets	\$205	\$271
Debt issuance costs	23	27
Company-owned life insurance	54	53
Financial derivatives	326	40
Pension assets	12	11
Other	<u>54</u>	<u>17</u>
Total other assets	<u>\$674</u>	<u>\$419</u>

11. Accrued Liabilities

Accrued liabilities consisted of the following components at December 31:

<u>Millions of dollars</u>	<u>2015</u>	<u>2014</u>
Payroll and benefits	\$ 415	\$ 442
Renewable identification numbers	322	223
Product sales rebates	165	187
Taxes other than income taxes	217	172
Income taxes	319	153
Interest	132	111
Share repurchases	45	85
Deferred revenues	57	73
Restructuring	20	25
Priority and administrative claims	10	13
Other	<u>108</u>	<u>70</u>
Total accrued liabilities	<u>\$1,810</u>	<u>\$1,554</u>

For information related to the increase in income taxes, see Note 18. For information related to share repurchases, see Note 20.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

12. Debt

Long-term loans, notes and other long-term debt net of unamortized discount and debt issuance cost consisted of the following as of December 31:

<u>Millions of dollars</u>	<u>2015</u>	<u>2014</u>
Senior Notes due 2019, \$2,000 million, 5.0% (\$15 million of debt issuance cost)	\$1,943	\$1,975
Senior Notes due 2021, \$1,000 million, 6.0% (\$11 million of debt issuance cost)	989	988
Senior Notes due 2024, \$1,000 million, 5.75% (\$10 million of debt issuance cost)	990	990
Senior Notes due 2055, \$1,000 million, 4.625% (\$16 million of discount; \$12 million of debt issuance cost)	972	—
Guaranteed Notes due 2044, \$1,000 million, 4.875% (\$11 million of discount; \$10 million of debt issuance cost)	979	978
Guaranteed Notes due 2023, \$750 million, 4% (\$8 million of discount; \$5 million of debt issuance cost)	737	736
Guaranteed Notes due 2043, \$750 million, 5.25% (\$22 million of discount; \$7 million of debt issuance cost)	721	721
Guaranteed Notes due 2027, \$300 million, 8.1%	300	300
Other	44	11
Total	<u>7,675</u>	<u>6,699</u>
Less current maturities	(4)	(4)
Long-term debt	<u>\$7,671</u>	<u>\$6,695</u>

Our 5% Senior Notes due 2019 include gains of \$35 million and \$7 million for the years ended December 31, 2015 and 2014, respectively, related to adjustments for our fixed-for-floating interest rate swaps, which are recognized in Interest expense in the Consolidated Statements of Income.

Short-term loans, notes and other short-term debt consisted of the following:

<u>Millions of dollars</u>	<u>2015</u>	<u>2014</u>
\$2,000 million Senior Revolving Credit Facility	\$—	\$—
\$900 million U.S. Receivables Securitization Facility	—	—
€450 million European Receivables Securitization Facility	—	—
Commercial paper	323	262
Financial payables to equity investees	4	6
Precious metal financings	26	77
Other	—	1
Total short-term debt	<u>\$353</u>	<u>\$346</u>

Aggregate maturities of debt during the next five years are \$357 million in 2016, \$37 million in 2017, \$2,000 million in 2019 and \$5,801 million thereafter. There are no scheduled maturities of debt in 2018 or in 2020.

Long-Term Debt

Senior Notes due 2055—In March 2015, we issued \$1,000 million of 4.625% Notes due 2055 at a discounted price of 98.353%.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

These unsecured notes rank equally in right of payment to all of LyondellBasell N.V.'s existing and future unsubordinated indebtedness.

The indenture governing these notes contains limited covenants, including those restricting our ability and the ability of our subsidiaries to incur indebtedness secured by significant property or by capital stock of subsidiaries that own significant property, enter into certain sale and lease-back transactions with respect to any significant property or enter into consolidations, mergers or sales of all or substantially all of our assets.

The notes may be redeemed before the date that is six months prior to the scheduled maturity date at a redemption price equal to the greater of 100% of the principal amount of the notes redeemed and the sum of the present values of the remaining scheduled payments of principal and interest (discounted at the applicable Treasury Yield plus 35 basis points) on the notes to be redeemed. The notes may also be redeemed on or after the date that is six months prior to the final maturity date of the notes at a redemption price equal to 100% of the principal amount of the notes redeemed plus accrued and unpaid interest.

Guaranteed Notes due 2044—In February 2014, LYB International Finance B.V. (“LYB Finance”), a direct, 100% owned finance subsidiary of LyondellBasell Industries N.V., as defined in Rule 3-10(b) of Regulation S-X, issued \$1,000 million of 4.875% guaranteed notes due 2044 at a discounted price of 98.831%.

These unsecured notes, which are fully and unconditionally guaranteed by LyondellBasell Industries N.V., rank equally in right of payment to all of LYB Finance's existing and future unsecured indebtedness and to all of LyondellBasell's existing and future unsubordinated indebtedness. There are no significant restrictions that would impede the Guarantor from obtaining funds by dividend or loan from its subsidiaries. Subsidiaries are generally prohibited from entering into arrangements that would limit their ability to make dividends to or enter into loans with the Guarantor.

The indenture governing these notes contains limited covenants, including those restricting our ability and the ability of our subsidiaries to incur indebtedness secured by significant property or by capital stock of subsidiaries that own significant property, enter into certain sale and lease-back transactions with respect to any significant property or enter into consolidations, mergers or sales of all or substantially all of our assets.

The notes may be redeemed before the date that is six months prior to the scheduled maturity date at a redemption price equal to the greater of 100% of the principal amount of the notes redeemed and the sum of the present values of the remaining scheduled payments of principal and interest (discounted at the applicable Treasury Yield plus 20 basis points) on the notes to be redeemed. The notes may also be redeemed on or after the date that is six months prior to the final maturity date of the notes at a redemption price equal to 100% of the principal amount of the notes redeemed plus accrued and unpaid interest.

Guaranteed Notes due 2023 and 2043—In July 2013, LYB Finance issued \$750 million of 4% guaranteed notes due 2023 and \$750 million of 5.25% Notes due 2043 at discounted prices of 98.678% and 97.004%, respectively.

These unsecured notes, which are fully and unconditionally guaranteed by LyondellBasell Industries N.V., rank equally in right of payment to all of LYB Finance's existing and future unsecured indebtedness and to all of LyondellBasell's existing and future unsubordinated indebtedness. There are no significant restrictions that would impede the Guarantor from obtaining funds by dividend or loan from its subsidiaries. Subsidiaries are generally prohibited from entering into arrangements that would limit their ability to make dividends to or enter into loans with the Guarantor.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The indenture governing these notes contains limited covenants, including those restricting our ability and the ability of our subsidiaries to incur indebtedness secured by significant property or by capital stock of subsidiaries that own significant property, enter into certain sale and lease-back transactions with respect to any significant property or enter into consolidations, mergers or sales of all or substantially all of our assets.

The notes may be redeemed and repaid, in whole or in part, at any time and from time to time prior to maturity at a redemption price equal to the greater of 100% of the principal amount of the notes redeemed, and the sum of the present values of the remaining scheduled payments of principal and interest on the notes to be redeemed. Such interest will be discounted to the date of redemption on a semi-annual basis at the applicable Treasury Yield plus 25 basis points in the case of the 4% Notes due 2023 and plus 30 basis points in the case of the 5.25% Notes due 2043.

Senior Notes due 2019, 2021 and 2024—In April 2012, we issued \$2,000 million aggregate principal amount of 5% senior notes due 2019 and \$1,000 million aggregate principal amount of 5.75% senior notes due 2024, each at an issue price of 100%. In November 2011, we issued \$1,000 million of 6% senior notes due 2021.

The indentures governing the 5%, 5.75% and 6% Senior Notes contain limited covenants, including those restricting our ability and the ability of our subsidiaries to incur indebtedness secured by any property or assets, enter into certain sale and lease-back transactions with respect to any assets or enter into consolidations, mergers or sales of all or substantially all of our assets.

These notes may be redeemed and repaid, in whole or in part, at any time and from time to time prior to the date that is 90 days prior to the scheduled maturity date of the notes at a redemption price equal to 100% of the principal amount of the notes redeemed plus a premium for each note redeemed equal to the greater of 1.00% of the then outstanding principal amount of the note and the excess of: (a) the present value at such redemption date of (i) the principal amount of the note at maturity plus (ii) all required interest payments due on the note through maturity (excluding accrued but unpaid interest), computed using a discount rate equal to the Treasury Rate as of such redemption date plus 50 basis points; over (b) the outstanding principal amount of the note. These notes may also be redeemed, in whole or in part, at any time on or after the date which is 90 days prior to the final maturity date of the notes, at a redemption price equal to 100% of the principal amount of the notes redeemed plus accrued and unpaid interest and additional interest, if any, to, but not including, the applicable redemption date.

Short-Term Debt

Senior Revolving Credit Facility—In June 2015, we entered into an agreement to extend the maturity of our senior revolving credit facility to June 2020. This facility, which may be used for dollar and euro denominated borrowings, has a sublimit for dollar and euro denominated letters of credit and supports our commercial paper program. By agreement in September 2015, the letters of credit sublimit was reduced to \$500 million. The aggregate balance of outstanding borrowings and letters of credit under the facility may not exceed \$2,000 million at any given time. Borrowings under the facility bear interest at a Base Rate or LIBOR, plus an applicable margin. Additional fees are incurred for the average daily unused commitments.

The facility contains customary covenants and warranties, including specified restrictions on indebtedness and liens. In addition, we are required to maintain a leverage ratio at the end of every quarter of 3.50 to 1.00 or less for the period covering the most recent four quarters. We are in compliance with these covenants as of December 31, 2015.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

At December 31, 2015, availability under this facility, which backs our \$2,000 million commercial paper program discussed below, was \$1,631 million. Availability under this facility is reduced by outstanding borrowings, outstanding letters of credit provided under the facility and notes issued under our \$2,000 million commercial paper program. A small portion of our availability under this facility is impacted by changes in the euro/U.S. dollar exchange rate. At December 31, 2015, we had \$323 million of outstanding commercial paper, no outstanding letters of credit and no outstanding borrowings under the facility.

Commercial Paper Program—In October 2014, we entered into a commercial paper program under which we may issue up to \$2,000 million of privately placed, unsecured, short-term promissory notes (“commercial paper”). This program is backed by our \$2,000 million Senior Revolving Credit Facility. Proceeds from the issuance of commercial paper may be used for general corporate purposes, including dividends and share repurchases.

U.S. Receivables Securitization Facility—In August 2015, we amended our U.S. accounts receivable securitization facility. This amendment, among other things, decreased the purchase limit from \$1 billion to \$900 million, added a \$300 million uncommitted accordion feature and extended the term of the facility to August 2018. Our U.S. accounts receivable securitization facility provides liquidity through the sale or contribution of trade receivables by certain of our U.S. subsidiaries to a wholly owned, bankruptcy-remote subsidiary on an ongoing basis and without recourse. The bankruptcy-remote subsidiary may then, at its option and subject to a borrowing base of eligible receivables, sell undivided interests in the pool of trade receivables to financial institutions participating in the facility. In the event of liquidation, the bankruptcy-remote subsidiary’s assets will be used to satisfy the claims of its creditors prior to any assets or value in the bankruptcy-remote subsidiary becoming available to us. We are responsible for servicing the receivables. This facility also provides for the issuance of letters of credit up to \$200 million. The term of the securitization facility may be extended in accordance with the provisions of the agreement.

The facility is also subject to customary warranties and covenants, including limits and reserves and the maintenance of specified financial ratios. We are required to maintain a leverage ratio at the end of every fiscal quarter of 3.50 to 1.00 or less for the period covering the most recent four quarters. Performance obligations under the facility are guaranteed by our parent company.

At December 31, 2015, availability under this facility was \$748 million. There were no borrowings or letters of credit outstanding under the facility.

European Receivables Securitization Facility—In April 2013, we amended and restated our €450 million European receivables securitization facility to obtain more favorable terms and conditions, including reduced pricing, and to extend the maturity date of the facility to April 2016. Under the terms of the amendment, we must maintain a leverage ratio at the end of every fiscal quarter of 3.50 to 1.00 or less for the period covering the most recent four quarters. Failure to maintain the ratio within the stated parameters constitutes a termination event, which left uncured, may result in the termination of the program. At December 31, 2015, there were no borrowings outstanding under the facility. Accordingly, availability under this facility at December 31, 2015 was \$483 million.

Precious Metal Financings—We enter into lease agreements for precious metals which are used in our production processes. All precious metal borrowings are classified as either Long-term or Short-term debt. Other long-term debt in the table above primarily consists of precious metal borrowings.

Weighted Average Interest Rate—At December 31, 2015 and 2014, our weighted average interest rates on outstanding short-term debt were 0.7% and 0.4%, respectively.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Debt Discount and Issuance Costs—Amortization of debt discount and debt issuance costs resulted in amortization expense of \$16 million, \$20 million and \$21 million for the years ended December 31, 2015, 2014 and 2013, respectively, which is included in Interest expense in the Consolidated Statements of Income.

Other Information—On January 28, 2016, LYB International Finance II B.V. was formed as a private company with limited liability in The Netherlands. LYB International Finance II B.V. is a direct, 100% owned finance subsidiary of LyondellBasell N.V., as defined in Rule 3-10(b) of Regulation S-X. Any debt securities issued by LYB International Finance II B.V. will be fully and unconditionally guaranteed by LyondellBasell N.V.

13. Lease Commitments

We lease office facilities, railcars, vehicles, and other equipment under operating leases. Some leases contain renewal provisions, purchase options and escalation clauses.

The aggregate future estimated payments under these commitments are:

<u>Millions of dollars</u>	
2016	\$ 372
2017	312
2018	278
2019	197
2020	149
Thereafter	<u>491</u>
Total minimum lease payments	<u><u>\$1,799</u></u>

Rental expense for the years ended December 31, 2015, 2014 and 2013 was \$422 million, \$412 million and \$328 million, respectively.

14. Financial Instruments

Cash Concentration—Our cash equivalents are placed in high-quality commercial paper, money market funds and time deposits with major international banks and financial institutions.

Market Risks—We are exposed to market risks, such as changes in commodity pricing, currency exchange rates and interest rates. To manage the volatility related to these exposures, we selectively enter into derivative transactions pursuant to our risk management policies. Derivative instruments are recorded at fair value on the balance sheet. Gains and losses related to changes in the fair value of derivative instruments not designated as hedges are recorded in earnings. For derivatives that have been designated as fair value hedges, the gains and losses of the derivatives and hedged instruments are recorded in earnings. For derivatives designated as cash flow and net investment hedges, the effective portion of the gains and losses is recorded through Other comprehensive income (loss). The ineffective portion of cash flow and net investment hedges is recorded in earnings.

Marketable Securities—We invest cash in investment-grade securities for periods generally not exceeding two years. Investments in securities with original maturities of three months or less are classified as Cash and cash equivalents. At December 31, 2015 and 2014, we had marketable securities classified as Cash and cash equivalents of \$575 million and \$431 million, respectively.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

We also have investments in marketable securities classified as available-for-sale. These securities, which are included in Short-term investments on the Consolidated Balance Sheets, are carried at estimated fair value with unrealized gains and losses recorded as a component of Accumulated other comprehensive income (“AOCI”). We periodically review our available-for-sale securities for other-than-temporary declines in fair value below the cost basis, and when events or changes in circumstances indicate the carrying value of an asset may not be recoverable, the investment is written down to fair value, establishing a new cost basis.

Repurchase Agreements—We invest in tri-party repurchase agreements. Under these agreements, we make cash purchases of securities according to a pre-agreed profile from our counterparties. The counterparties have an obligation to repurchase, and we have an obligation to sell, the same or substantially the same securities at a pre-defined date for a price equal to the purchase price plus interest. These securities, which pursuant to our policy are held by a third-party custodian and must generally have a minimum collateral value of 102%, secure the counterparty’s obligation to repurchase the securities. Depending upon maturity, these tri-party repurchase agreements are treated as short-term loans receivable and are reflected in Prepaid expenses and other current assets or as long-term loans receivable reflected in Other investments and long-term receivables on our Consolidated Balance Sheets. The balance of our investment at December 31, 2015 and 2014 was \$387 million and \$350 million, respectively.

Commodity Prices—We are exposed to commodity price volatility related to anticipated purchases of natural gas liquids, crude oil and other raw materials and sales of our products. We selectively use over-the-counter commodity swaps, options and exchange traded futures contracts with various terms to manage the volatility related to these risks. In addition, we are exposed to volatility on the prices of precious metals to the extent that we have obligations, classified as embedded derivatives, tied to the price of precious metals associated with secured borrowings. All aforementioned contracts are generally limited to durations of one year or less. At December 31, 2015, commodity futures contracts in the notional amount of \$140 million, maturing from February 2016 to October 2016, were outstanding.

Foreign Currency Rates—We have significant worldwide operations. The functional currencies of our consolidated subsidiaries through which we operate are primarily the U.S. dollar and the euro. We enter into transactions denominated in currencies other than our designated functional currencies. As a result, we are exposed to foreign currency risk on receivables and payables. We maintain risk management control policies intended to monitor foreign currency risk attributable to our outstanding foreign currency balances. These control policies involve the centralization of foreign currency exposure management, the offsetting of exposures and the estimating of expected impacts of changes in foreign currency rates on our earnings. We enter into foreign currency forward contracts to reduce the effects of our net currency exchange exposures. At December 31, 2015, foreign currency forward contracts in the notional amount of \$180 million, maturing in January 2016 to March 2016, were outstanding.

For forward contracts that economically hedge recognized monetary assets and liabilities in foreign currencies and that are not designated as net investment hedges, no hedge accounting is applied. Changes in the fair value of foreign currency forward contracts, which are reported in the Consolidated Statements of Income, are offset in part by the currency translation results recognized on the assets and liabilities.

Foreign Currency Gain (Loss)—Other income (expense), net, in the Consolidated Statements of Income reflected gains (losses) of (\$7) million, \$15 million and (\$4) million for 2015, 2014 and 2013, respectively.

Basis Swaps—In 2015, we entered into cross-currency floating-to-floating interest rate swaps (“basis swaps”) to reduce the volatility in stockholders’ equity resulting from changes in currency exchange rates of our foreign

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

subsidiaries with respect to the U.S. dollar. Under the terms of these contracts, which have been designated as net investment hedges, we will make interest payments in euros at 3 Month EURIBOR plus basis and will receive interest in U.S. dollars at 3 Month LIBOR. Upon the maturities of these contracts, we will pay the principal amount in euros and receive U.S. dollars from our counterparties.

We use the long-haul method to assess hedge effectiveness using a regression analysis approach under the hypothetical derivative method. We perform the regression analysis of our basis swap contracts at least on a quarterly basis over an observation period of three years, utilizing data that is relevant to the hedge duration. We use the forward method to measure ineffectiveness.

The effective portion of the unrealized gains and losses on these basis swap contracts is reported within Foreign currency translations adjustments in Accumulated other comprehensive loss and reclassified to earnings only when realized upon the sale or upon complete or substantially complete liquidation of the investment in the foreign entity. Cash flows from basis swaps are reported in Cash flows from investing activities in the Consolidated Statement of Cash Flows.

There was no ineffectiveness recorded during the year ended December 31, 2015.

The following table summarizes our basis swaps outstanding:

<u>Millions of dollars</u>	<u>December 31, 2015</u>	
	<u>Notional Value</u>	<u>Fair Value</u>
Basis swaps expiring in 2016	\$500	\$10
Basis swaps expiring in 2017	305	6
Basis swaps expiring in 2018	139	2

Forward Exchange Contracts—In December 2015, we entered into forward exchange contracts with an aggregate notional value of €750 million (\$795 million) to mitigate the risk associated with the fluctuations in the Euro to U.S. Dollar exchange rate related to our investments in foreign subsidiaries.

We have elected to designate these forward exchange contracts as net investment hedges. The effective portion of the gain or loss is recorded within foreign currency translations adjustments in Accumulated other comprehensive income (loss). In periods where the hedging relationship is deemed ineffective, changes in the fair value will be recorded directly to Other income (expense), net in the Consolidated Statements of Income. Cash flows from these forward exchange contracts are reported in Cash flows from investing activities in the Consolidated Statement of Cash Flows.

We use the long-haul method to assess both prospective and retrospective hedge effectiveness using a regression analysis approach under the hypothetical derivative method. We use the dollar-offset method under the hypothetical derivative method to measure hedge ineffectiveness. We perform the regression analysis of forward exchange contracts at least on a quarterly basis utilizing data that is relevant to the hedge duration.

The ineffectiveness recorded for this hedging relationship during the year ended December 31, 2015 was a loss of \$1 million.

Cross-Currency Swaps—We have cross-currency swap contracts that reduce our exposure to the foreign currency exchange risk associated with certain intercompany loans. Under the terms of these contracts, which have been designated as cash flow hedges, we will make interest payments in euros and receive interest in U.S.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

dollars. Upon the maturities of these contracts, we will pay the principal amount of the loans in euros and receive U.S. dollars from our counterparties.

We use the long-haul method to assess hedge effectiveness using a regression analysis approach under the hypothetical derivative method. We perform the regression analysis over an observation period of three years, utilizing data that is relevant to the hedge duration. We use the dollar offset method under the hypothetical derivative method to measure ineffectiveness.

The effective portion of the unrealized gains and losses on these cross-currency swap contracts is reported in Accumulated other comprehensive income (loss) and reclassified to earnings over the period that the hedged intercompany loans affect earnings based on changes in spot rates. The ineffective portion of the unrealized gains and losses is recorded directly to Other income (expense), net in the Consolidated Statements of Income. In addition, the swaps are marked-to-market each reporting period with the euro notional values measured based on the current foreign exchange spot rate.

There was no ineffectiveness recorded during the period.

The following table summarizes our cross-currency swaps outstanding:

<u>Millions of dollars, except expiration date and rates</u>	<u>Expiration Date</u>	<u>Average Interest Rate</u>	<u>December 31, 2015</u>		<u>December 31, 2014</u>	
			<u>Notional Value</u>	<u>Fair Value</u>	<u>Notional Value</u>	<u>Fair Value</u>
Pay Euro	2021	4.55%	\$1,000	\$141	\$1,000	\$19
Receive U.S. dollars		6.00%				
Pay Euro	2024	4.37%	1,000	145	1,000	16
Receive U.S. dollars		5.75%				
Pay Euro	2027	3.69%	300	14		
Receive U.S. dollars		5.49%				

Forward-Starting Interest Rate Swaps—In March 2015, we entered into forward-starting interest rate swaps to mitigate the risk of adverse changes in the benchmark interest rates on the anticipated refinancing of our senior notes due 2019. These interest rate swaps will be terminated upon debt issuance. The total notional amount of these forward-starting interest rate swaps was \$1,000 million at December 31, 2015. The ineffectiveness recorded for this hedging relationship was less than \$1 million during the year ended December 31, 2015.

In January 2015, we entered into forward-starting interest rate swaps with a total notional value of \$750 million to mitigate the risk of adverse changes in the benchmark interest rates on the Company’s planned issuance of fixed-rate debt in 2015. These forward-starting interest rate swaps were terminated upon issuance of the \$1,000 million senior notes due 2055 in March 2015. The ineffectiveness recorded for this hedging relationship was less than \$1 million during the year ended December 31, 2015.

In February 2014, we entered into forward-starting interest rate swaps with a total notional value of \$500 million to hedge the risk of adverse changes in the benchmark interest rates for anticipated fixed-rate debt issuances in 2014. The swap was terminated upon issuance of the \$1,000 million of guaranteed notes due 2044.

We have elected to designate these forward-starting interest rate swaps as cash flow hedges. The effective portion of the gain or loss is recorded in Accumulated other comprehensive income (loss). In periods where the

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

hedging relationship is deemed ineffective, changes in the fair value will be recorded as Interest expense in the Consolidated Statements of Income.

We use a regression analysis approach under the hypothetical derivative method to assess both prospective and retrospective hedge effectiveness. We use the dollar-offset method under the hypothetical derivative method to measure hedge ineffectiveness.

In 2015 and 2014, we recognized a gain of \$15 million and a loss of \$17 million, respectively, in Accumulated other comprehensive income (loss) related to the settlement of our forward-starting interest rate swap agreements. The related deferred gains and losses recognized in Accumulated other comprehensive income (loss) are amortized to interest expense over the original term of the related swaps using the effective interest method.

As of December 31, 2015, less than \$1 million (on a pretax basis) is scheduled to be reclassified as an increase to interest expense over the next twelve months.

Fixed-for-Floating Interest Rate Swaps—In 2014, we entered into U.S. dollar fixed-for-floating interest rate swaps with third party financial institutions to mitigate changes in the fair value of our \$2,000 million 5% senior notes due 2019 associated with the risk of variability in the 3 Month USD LIBOR rate (the benchmark interest rate). These interest rate swaps are used as part of our current interest rate risk management strategy to achieve a desired proportion of variable versus fixed rate debt.

Under these arrangements, we exchange fixed-for-floating rate interest payments to effectively convert our fixed-rate debt to floating-rate debt. The fixed and variable cash payments related to the interest rate swaps are net settled semi-annually and classified as Other, net, in the Cash flows from operating activities section of the Consolidated Statements of Cash Flows.

We have elected to designate these fixed-for-floating interest rate swaps as fair value hedges. We use the long-haul method to assess hedge effectiveness using a regression analysis approach. We perform the regression analysis over an observation period of three years, utilizing data that is relevant to the hedge duration. We use the dollar offset method to measure ineffectiveness.

Changes in the fair value of the derivatives and changes in the value of the hedged items based on changes in the benchmark interest rate are recorded as Interest expense in our Consolidated Statements of Income. We evaluate the effectiveness of the hedging relationship periodically and calculate the changes in the fair value of the derivatives and the underlying hedged items separately. During the years ended December 31, 2015 and 2014, we recognized net gains of \$44 and \$17 million, respectively, related to the ineffectiveness of our hedging relationships.

At December 31, 2015, we had outstanding interest rate swap agreements with notional amounts of \$2,000 million, maturing on April 15, 2019.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Available-for-Sale Securities—The following table summarizes the amortized cost, gross unrealized gains and losses, and fair value of available-for-sale securities measured on a recurring basis that are outstanding as of December 31, 2015 and 2014. Refer to Note 15 for additional information regarding the fair value of available-for-sale securities.

<u>Millions of dollars</u>	<u>December 31, 2015</u>			
	<u>Cost</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Commercial paper	\$ 329	\$—	\$—	\$ 329
Bonds	175	—	—	175
Certificates of deposit	215	—	—	215
Limited partnership investments	350	—	(5)	345
Total available-for-sale securities	<u>\$1,069</u>	<u>\$—</u>	<u>\$ (5)</u>	<u>\$1,064</u>

<u>Millions of dollars</u>	<u>December 31, 2014</u>			
	<u>Cost</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Commercial paper	\$1,029	\$ 1	\$—	\$1,030
Bonds	414	—	(1)	413
Certificates of deposit	150	—	—	150
Total available-for-sale securities	<u>\$1,593</u>	<u>\$ 1</u>	<u>\$ (1)</u>	<u>\$1,593</u>

Our limited partnership investments include investments in, among other things, equities and equity related securities, debt securities, credit instruments, global interest rate products, currencies, commodities, futures, options, warrants and swaps. These investments, which include both long and short positions, may be redeemed at least monthly with advance notice ranging up to ninety days. The fair value of these funds is estimated using the net asset value (NAV) per share of the respective pooled fund investment.

No losses related to other-than-temporary impairments of our available-for-sale investments have been recorded in Accumulated other comprehensive income (loss) during the years ended December 31, 2015 and 2014.

As of December 31, 2015, the commercial paper securities held by the Company had maturities between five and six months; bonds had maturities between less than one and twenty one months; certificates of deposit mature within fourteen months; and limited partnership investments mature between one and three months.

The proceeds from maturities and sales of our available-for-sale securities during the years ended and December 31, 2015 and 2014 are summarized in the following table.

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>	
	<u>2015</u>	<u>2014</u>
Proceeds from maturities of securities	\$2,288	\$1,730
Proceeds from sales of securities	201	21
	<u>\$2,489</u>	<u>\$1,751</u>

We recognized realized gains of less than \$1 million in connection with the sale of securities during the years ended December 31, 2015 and 2014.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The specific identification method was used to identify the cost of the securities sold and the amounts reclassified out of Accumulated other comprehensive income into earnings.

The following table summarizes the fair value and unrealized losses related to available-for-sale securities that were in a continuous unrealized loss position for less than and greater than twelve months as of December 31, 2015 and 2014.

<u>Millions of dollars</u>	December 31, 2015			
	<u>Less than 12 months</u>		<u>Greater than 12 months</u>	
	<u>Fair Value</u>	<u>Unrealized Loss</u>	<u>Fair Value</u>	<u>Unrealized Loss</u>
Bonds	\$ 46	\$—	\$ 35	\$—
Certificates of deposit	150	—	—	—
Limited partnership investments	345	(5)	—	—
Total	<u>\$541</u>	<u>\$ (5)</u>	<u>\$ 35</u>	<u>\$—</u>

<u>Millions of dollars</u>	December 31, 2014			
	<u>Less than 12 months</u>		<u>Greater than 12 months</u>	
	<u>Fair Value</u>	<u>Unrealized Loss</u>	<u>Fair Value</u>	<u>Unrealized Loss</u>
Commercial paper	\$ 45	\$—	\$—	\$—
Bonds	294	(1)	—	—
Certificates of deposit	150	—	—	—
Total	<u>\$489</u>	<u>\$ (1)</u>	<u>\$—</u>	<u>\$—</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Financial Instruments—The following table summarizes financial instruments outstanding as of December 31, 2015 and 2014 that are measured at fair value on a recurring basis. Refer to Note 15, *Fair Value Measurement*, for additional information regarding the fair value of financial instruments.

<u>Millions of dollars</u>	<u>Balance Sheet Classification</u>	<u>December 31, 2015</u>		<u>December 31, 2014</u>	
		<u>Notional Amount</u>	<u>Fair Value</u>	<u>Notional Amount</u>	<u>Fair Value</u>
Assets—					
Derivatives designated as net investment hedges:					
Basis swaps	Prepaid expenses and other current assets	\$ 500	\$ 10	\$ —	\$ —
Basis swaps	Other assets	444	8	—	—
Derivatives designated as cash flow hedges:					
Cross-currency swaps	Other assets	2,300	291	2,000	30
Cross-currency swaps	Prepaid expenses and other current assets	—	9	—	5
Forward-starting interest rate swaps	Other assets	600	8	—	—
Derivatives designated as fair value hedges:					
Fixed-for-floating interest rate swaps	Other assets	2,000	19	2,000	10
Fixed-for-floating interest rate swaps	Prepaid expenses and other current assets	—	6	—	6
Derivatives not designated as hedges:					
Commodities	Prepaid expenses and other current assets	73	8	—	2
Embedded derivatives	Prepaid expenses and other current assets	42	4	77	3
Foreign currency	Prepaid expenses and other current assets	105	1	107	—
Non-derivatives:					
Available-for-sale securities	Short-term investments	1,073	1,064	1,587	1,593
		<u>\$7,137</u>	<u>\$1,428</u>	<u>\$5,771</u>	<u>\$1,649</u>
Liabilities—					
Derivatives designated as net investment hedges:					
Forward exchange contracts	Accrued liabilities	\$ 795	\$ 24	\$ —	\$ —
Derivatives designated as cash flow hedges:					
Forward-starting interest rate swaps	Other liabilities	400	6	—	—
Derivatives not designated as hedges:					
Commodities	Accrued liabilities	67	2	28	1
Embedded derivatives	Accrued liabilities	21	—	—	—
Foreign currency	Accrued liabilities	75	3	680	13
Non-derivatives:					
Performance share awards	Accrued liabilities	23	23	22	22
Performance share awards	Other liabilities	17	17	14	14
		<u>\$1,398</u>	<u>\$ 75</u>	<u>\$ 744</u>	<u>\$ 50</u>

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Millions of dollars	Year Ended December 31, 2013			Income Statement Classification
	Gain (Loss) Recognized in AOCI	Gain (Loss) Reclassified from AOCI to Income	Additional Gain (Loss) Recognized in Income	
Derivatives not designated as hedges:				
Commodities	\$—	\$—	\$(12)	Cost of sales
Embedded derivatives	—	—	25	Cost of sales
Foreign currency	—	—	6	Other income (expense), net
	<u>\$—</u>	<u>\$—</u>	<u>\$ 19</u>	

For the years ended December 31, 2015 and 2014, the pretax effect of additional gain (loss) recognized in income for the fixed-for-floating interest rate swaps includes the net value for accrued interest of \$29 million and \$6 million, respectively.

15. Fair Value Measurement

The following table presents the financial instruments outstanding as of December 31, 2015 and 2014 that are measured at fair value on a recurring basis.

Millions of dollars	December 31, 2015			
	Fair Value	Level 1	Level 2	Level 3
Assets—				
Derivatives:				
Basis swaps	\$ 18	\$—	\$ 18	\$—
Cross-currency swaps	300	—	300	—
Forward-starting interest rate swaps	8	—	8	—
Fixed-for-floating interest rate swaps	25	—	25	—
Commodities	8	8	—	—
Embedded derivatives	4	—	4	—
Foreign currency	1	—	1	—
Non-derivatives:				
Available-for-sale securities	719	—	719	—
Available-for-sale securities measured at net asset value*	345	—	—	—
	<u>\$1,428</u>	<u>\$ 8</u>	<u>\$1,075</u>	<u>\$—</u>
Liabilities—				
Derivatives:				
Forward exchange contracts	\$ 24	\$—	\$ 24	\$—
Forward-starting interest rate swaps	6	—	6	—
Commodities	2	—	2	—
Foreign currency	3	—	3	—
Non-derivatives:				
Performance share awards	40	40	—	—
	<u>\$ 75</u>	<u>\$ 40</u>	<u>\$ 35</u>	<u>\$—</u>

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Millions of dollars	December 31, 2014			
	Fair Value	Level 1	Level 2	Level 3
Assets—				
Derivatives:				
Cross-currency swaps	\$ 35	\$—	\$ 35	\$—
Fixed-for-floating interest rate swaps	16	—	16	—
Commodities	2	2	—	—
Embedded derivatives	3	—	3	—
Non-derivatives:				
Available-for-sale securities	1,593	—	1,593	—
	<u>\$1,649</u>	<u>\$ 2</u>	<u>\$1,647</u>	<u>\$—</u>
Liabilities—				
Derivatives:				
Commodities	\$ 1	\$ 1	\$ —	\$—
Foreign currency	13	—	13	—
Non-derivatives:				
Performance share awards	36	36	—	—
	<u>\$ 50</u>	<u>\$ 37</u>	<u>\$ 13</u>	<u>\$—</u>

* In accordance with Fair Measurement Topic 820, Subtopic 10, certain investments measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The amounts presented in this table are intended to facilitate reconciliation to the Consolidated Balance Sheets.

There were no transfers between Level 1 and Level 2 during the years ended December 31, 2015 and 2014.

The following table presents the carrying value and estimated fair value of our financial instruments that are not measured at fair value on a recurring basis as of December 31, 2015 and 2014. Short-term and long-term loans receivable, which represent our repurchase agreements, and short-term and long-term debt are recorded at amortized cost in the Consolidated Balance Sheets. The carrying and fair values of short-term and long-term debt exclude capital leases.

Millions of dollars	December 31, 2015				
	Carrying Value	Fair Value	Level 1	Level 2	Level 3
Non-derivatives:					
Assets:					
Short-term loans receivable	\$ 289	\$ 289	\$—	\$ 289	\$—
Long-term loans receivable	98	98	—	98	—
Total	<u>\$ 387</u>	<u>\$ 387</u>	<u>\$—</u>	<u>\$ 387</u>	<u>\$—</u>
Liabilities:					
Short-term debt	\$ 26	\$ 23	\$—	\$ 23	\$—
Long-term debt	7,671	8,034	—	8,032	2
Total	<u>\$7,697</u>	<u>\$8,057</u>	<u>\$—</u>	<u>\$8,055</u>	<u>\$ 2</u>

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

<u>Millions of dollars</u>	December 31, 2014				
	Carrying Value	Fair Value	Level 1	Level 2	Level 3
Non-derivatives:					
Assets:					
Short-term loans receivable	\$ 350	\$ 350	\$—	\$ 350	\$—
Liabilities:					
Short-term debt	\$ 77	\$ 74	\$—	\$ 74	\$—
Long-term debt	6,694	7,529	—	7,523	6
Total	\$6,771	\$7,603	\$—	\$7,597	\$ 6

The fair value of all non-derivative financial instruments included in Current assets, including Cash and cash equivalents, Restricted cash and Accounts receivable, and Current liabilities, including Short-term debt excluding precious metal financings, and Accounts payable, approximates the applicable carrying value due to the short maturity of those instruments.

We use the following inputs and valuation techniques to estimate the fair value of our financial instruments:

Basis Swaps—The fair value of our basis swap contracts is calculated using the present value of future cash flows discounted using observable inputs such as known notional value amounts, yield curves, spot and forward exchange rates as well as discount rates.

Cross-Currency Swaps—The fair value of our cross-currency swaps is calculated using the present value of future cash flows discounted using observable inputs with the foreign currency leg revalued using published spot and future exchange rates on the valuation date.

Forward-Starting Interest Rate Swaps—The fair value of our forward-starting interest rate swaps is calculated using the present value of future cash flows method and based on observable inputs such as benchmark interest rates.

Fixed-for-Floating Interest Rate Swaps—The fair value of our fixed-for-floating interest rate swaps is calculated using the present value of future cash flows method and based on observable inputs such as interest rates and market yield curves.

Commodity and Embedded Derivatives—The fair values of our commodity derivatives classified as Level 1 and embedded derivatives are measured using closing market prices at the end of the reporting period obtained from the New York Mercantile Exchange and from third-party broker quotes and pricing providers.

The fair value of our commodity swaps classified as Level 2 is determined using a combination of observable and unobservable inputs. The observable inputs consist of future market values of various crude and heavy fuel oils, which are readily available through public data sources. The unobservable input, which is the estimated discount or premium used in the market pricing, is calculated using an internally-developed, multi-linear regression model based on the observable prices of the known components and their relationships to historical prices. A significant change in this unobservable input would not have a material impact on the fair value measurement of our Level 2 commodity swaps.

Foreign Currency Derivatives and Forward Exchange Contracts—The fair value of our foreign currency derivatives is based on forward market rates.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Available-for-Sale Securities—Fair value is calculated using observable market data for similar securities and broker quotes from recognized purveyors of market data or the net asset value for limited partnership investments provided by the fund administrator.

Performance Share Awards—Fair value is determined using the quoted market price of our stock.

Short-Term and Long-Term Loans Receivable—Valuations are based on discounted cash flows, which consider prevailing market rates for the respective instrument maturity in addition to corroborative support from the minimum underlying collateral requirements.

Short-Term Debt—Fair values of short-term borrowings related to precious metal financing arrangements are determined based on the current market price of the associated precious metal.

Long-Term Debt—Fair value is calculated using pricing data obtained from well-established and recognized vendors of market data for debt valuations.

The following table summarizes the basis used to measure certain assets and liabilities at fair value on a nonrecurring basis in the Consolidated Balance Sheets.

<u>Millions of dollars</u>	December 31, 2013			
	Fair Value	Level 1	Level 2	Level 3
Equity investment	\$20	\$—	\$—	\$20

In accordance with ASC 323-10, *Equity Method and Joint Ventures*, our NOC Asia Limited joint venture was written down to a fair value of \$20 million following a revision to the terms of the agreement governing the joint venture. As a result, a non-cash impairment charge of \$10 million was included in earnings for the year ended December 31, 2013.

16. Pension and Other Postretirement Benefits

We have defined benefit pension plans which cover employees in the U.S. and various non-U.S. countries. We also sponsor postretirement benefit plans other than pensions that provide medical benefits to certain of our U.S., Canadian, and French employees. In addition, we provide other postemployment benefits such as early retirement and deferred compensation severance benefits to employees of certain non-U.S. countries. We use a measurement date of December 31 for all of our benefit plans.

Most employees in the U.S. and certain non-U.S. countries are eligible to participate in defined contribution plans (“Employee Savings Plans”) by contributing a portion of their compensation. We also make employer contributions, such as matching contributions, to certain of these plans. The Company also sponsors a nonqualified deferred compensation plan that covers senior management in the U.S.

For 2015, the actual returns were a loss of 0.83% and a gain of 1.26% for U.S. and non-U.S. plan assets, respectively.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table provides a reconciliation of projected benefit obligations, plan assets and the funded status of our U.S. and non-U.S. defined benefit pension plans:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>			
	<u>2015</u>		<u>2014</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Change in benefit obligation:				
Benefit obligation, beginning of period	\$2,178	\$1,408	\$1,932	\$1,362
Service cost	45	32	43	29
Interest cost	85	37	88	48
Actuarial loss (gain)	(109)	8	249	188
Plan amendments	—	—	—	(9)
Benefits paid	(120)	(56)	(120)	(40)
Participant contributions	—	1	—	3
Settlement	(13)	(1)	(14)	(23)
Foreign exchange effects	—	(112)	—	(150)
Benefit obligation, end of period	<u>2,066</u>	<u>1,317</u>	<u>2,178</u>	<u>1,408</u>
Change in plan assets:				
Fair value of plan assets, beginning of period	1,898	735	1,959	667
Actual return on plan assets	(27)	63	65	117
Company contributions	51	56	8	86
Benefits paid	(120)	(56)	(120)	(40)
Participant contributions	—	1	—	3
Settlement	(13)	(1)	(14)	(23)
Foreign exchange effects	—	(75)	—	(75)
Fair value of plan assets, end of period	<u>1,789</u>	<u>723</u>	<u>1,898</u>	<u>735</u>
Funded status of continuing operations, end of period	<u>\$ (277)</u>	<u>\$ (594)</u>	<u>\$ (280)</u>	<u>\$ (673)</u>

<u>Millions of dollars</u>	<u>December 31, 2015</u>		<u>December 31, 2014</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Amounts recognized in the Consolidated Balance Sheets consist of:				
Prepaid benefit cost, long-term	\$ 1	\$ 10	\$ 1	\$ 9
Accrued benefit liability, current	—	(19)	—	(22)
Accrued benefit liability, long-term	(278)	(585)	(281)	(660)
Funded status, end of period	<u>\$(277)</u>	<u>\$(594)</u>	<u>\$(280)</u>	<u>\$(673)</u>

<u>Millions of dollars</u>	<u>December 31, 2015</u>		<u>December 31, 2014</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Amounts recognized in Accumulated other comprehensive income (loss):				
Actuarial and investment loss	\$400	\$225	\$348	\$230
Prior service cost	3	3	3	8
Balance, end of period	<u>\$403</u>	<u>\$228</u>	<u>\$351</u>	<u>\$238</u>

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following additional information is presented for our U.S. and non-U.S. pension plans as of December 31:

<u>Millions of dollars</u>	<u>December 31, 2015</u>		<u>December 31, 2014</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Accumulated benefit obligation for defined benefit plans	\$2,040	\$1,215	\$2,150	\$1,288

Pension plans with projected benefit obligations in excess of the fair value of assets are summarized as follows at December 31:

<u>Millions of dollars</u>	<u>December 31, 2015</u>		<u>December 31, 2014</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Projected benefit obligations	\$2,004	\$864	\$2,110	\$1,307
Fair value of assets	1,726	260	1,829	624

Pension plans with accumulated benefit obligations in excess of the fair value of assets are summarized as follows at December 31:

<u>Millions of dollars</u>	<u>December 31, 2015</u>		<u>December 31, 2014</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Accumulated benefit obligations	\$1,897	\$665	\$1,998	\$696
Fair value of assets	1,643	132	1,742	106

The following table provides the components of net periodic pension costs:

<u>Millions of dollars</u>	<u>U.S. Plans</u>		
	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Net Periodic Pension Cost:			
Service cost	\$ 45	\$ 43	\$ 44
Interest cost	85	88	80
Actual return on plan assets	27	(65)	(301)
Less—return in excess of (less than) expected return	(175)	(90)	168
Expected return on plan assets	(148)	(155)	(133)
Settlement and curtailment loss	2	2	—
Actuarial and investment loss amortization	13	—	26
Net periodic benefit cost (credit)	<u>\$ (3)</u>	<u>\$ (22)</u>	<u>\$ 17</u>

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Millions of dollars	Non-U.S. Plans		
	Year Ended December 31,		
	2015	2014	2013
Net Periodic Pension Cost:			
Service cost	\$ 32	\$ 29	\$ 30
Interest cost	37	48	45
Actual return on plan assets	(63)	(117)	(12)
Less—return less than expected return	39	91	(11)
Expected return on plan assets	(24)	(26)	(23)
Settlement and curtailment (gain) loss	—	1	(4)
Prior service cost amortization	2	—	14
Actuarial and investment loss amortization	8	4	2
Net periodic benefit cost	<u>\$ 55</u>	<u>\$ 56</u>	<u>\$ 64</u>

Our goal is to manage pension investments over the longer term to achieve optimal returns with an acceptable level of risk and volatility. The assets are externally managed by professional investment firms and performance is evaluated continuously against specific benchmarks.

The actual and target asset allocation for our plans are as follows:

Millions of dollars	2015		2014	
	Actual	Target	Actual	Target
Canada				
Equity securities	47%	50%	49%	50%
Fixed income	53%	50%	51%	50%
United Kingdom—Lyondell Chemical Plans				
Equity securities	50%	50%	53%	50%
Fixed income	50%	50%	47%	50%
United Kingdom—Basell Plans				
Equity securities	56%	60%	57%	60%
Fixed income	44%	40%	43%	40%
United States				
Equity securities	52%	51%	54%	51%
Fixed income	32%	30%	33%	30%
Alternatives	16%	19%	13%	19%
Netherlands—Lyondell Chemical Plans				
Fixed income	100%	100%	100%	100%
Netherlands—Basell Plans				
Equity securities	9%	10%	10%	10%
Fixed income	91%	90%	90%	90%

We estimate the following contributions to our pension plans in 2016:

Millions of dollars	U.S.	Non-U.S.
Defined benefit plans	\$ 49	\$61
Multi-employer plans	—	8
Total	<u>\$ 49</u>	<u>\$69</u>

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

As of December 31, 2015, future expected benefit payments by our pension plans which reflect expected future service, as appropriate, are as follows:

<u>Millions of dollars</u>	<u>U.S.</u>	<u>Non-U.S.</u>
2016	\$139	\$ 57
2017	143	54
2018	144	53
2019	143	49
2020	142	48
2021 through 2025	692	262

The following tables set forth the principal assumptions on discount rates, projected rates of compensation increase and expected rates of return on plan assets, where applicable. These assumptions vary for the different plans, as they are determined in consideration of the local conditions.

The assumptions used in determining the net benefit liabilities for our pension plans were as follows at December 31:

	<u>2015</u>		<u>2014</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Weighted average assumptions:				
Discount rate	4.38%	2.70%	4.04%	2.84%
Rate of compensation increase	4.00%	3.15%	4.00%	3.19%

The assumptions used in determining net benefit costs for our pension plans were as follows:

	<u>Year Ended December 31,</u>					
	<u>2015</u>		<u>2014</u>		<u>2013</u>	
	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>	<u>U.S.</u>	<u>Non-U.S.</u>
Weighted average assumptions for the year:						
Discount rate	4.04%	2.84%	4.73%	3.78%	3.82%	3.63%
Expected return on plan assets	8.00%	3.63%	8.00%	4.12%	8.00%	3.73%
Rate of compensation increase	4.00%	3.19%	4.00%	3.37%	4.00%	3.12%

The discount rate assumptions reflect the rates at which the benefit obligations could be effectively settled, based on the yields of high quality long-term bonds where the term closely matches the term of the benefit obligations. The weighted average expected long-term rate of return on assets in our U.S. plans of 8.00% is based on the average level of earnings that our independent pension investment advisor had advised could be expected to be earned over a fifteen to twenty year time period consistent with the plans' target asset allocation, historical capital market performance, historical plan performance (since the 1997 inception of the U.S. Master Trust) and a forecast of expected future asset returns. The weighted average expected long-term rate of return on assets in our non-U.S. plans of 3.63% is based on expectations and asset allocations that vary by region. We review these long-term assumptions on a periodic basis.

In the U.S. plans, the expected rate of return was derived based on the target asset allocation of 51% equity securities (8.1% expected return), 30% fixed income securities (4.9% expected return), and 19% alternative investments (8.5% expected return). In the non-U.S. plans, the investments consist primarily of fixed income securities whose expected rates of return range from 2.45% to 5.75%.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table reflects the actual annualized total returns for the periods ended December 31, 2015:

	<u>December 31, 2015</u>	<u>Annualized</u>			
		<u>One Year</u>	<u>Three Years</u>	<u>Five Years</u>	<u>Ten Years</u>
U.S. plan assets	(0.83)%	(0.83)%	6.20%	6.50%	5.31%
Non-U.S. plan assets	1.26%	1.26%	9.79%	5.90%	4.83%

Actual rates of return may differ from the expected rate due to the volatility normally experienced in capital markets. The goal is to manage the investments over the long term to achieve optimal returns with an acceptable level of risk and volatility in order to meet the benefit obligations of the plans as they come due.

Our pension plans have not directly invested in securities of LyondellBasell N.V., and there have been no significant transactions between any of the pension plans and the Company or related parties thereof.

In accordance with ASC 820, *Fair Value Measurements and Disclosures*, fair value measurements are classified using the following hierarchy:

Level 1—Quoted prices for identical instruments in active markets.

Level 2—Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs or significant value-drivers are observable in active markets.

Level 3—Model-derived valuations in which one or more significant inputs or significant value-drivers are unobservable.

When available, quoted market prices are used to determine fair value and such measurements are classified within Level 1. In some cases where market prices are not available, observable market-based inputs are used to calculate fair value, in which case the measurements are classified within Level 2. If quoted or observable market prices are not available, fair value is based upon internally-developed models that use, where possible, current market-based parameters such as interest rates, yield curves and currency rates. These measurements are classified within Level 3.

Fair value measurements are classified according to the lowest level input or value-driver that is significant to the valuation. A measurement may therefore be classified within Level 3 even though there may be significant inputs that are readily observable.

Changes in fair value levels—Management reviews the disclosures regarding fair value measurements annually at year end. If an instrument classified as Level 1 subsequently ceases to be actively traded, it is transferred out of Level 1. In such cases, instruments are reclassified as Level 2, unless the measurement of its fair value requires the use of significant unobservable inputs, in which case it is reclassified as Level 3.

The major classes of the pension assets are measured at fair value using the following valuation methodologies:

Common and preferred stock—Valued at the closing price reported on the market on which the individual securities are traded.

Fixed income securities—Certain securities that are not traded on an exchange are valued at the closing price reported by pricing services. Other securities are valued based on yields currently available on comparable securities of issuers with similar credit ratings.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Commingled funds—Valued based upon the unit values of such collective trust funds held at year end by the pension plans. Unit values are based on the fair value of the underlying assets of the fund derived from inputs principally from, or corroborated by, observable market data by correlation or other means.

Real estate—Valued on the basis of a discounted cash flow approach, which includes the future rental receipts, expenses, and residual values as the highest and best use of the real estate from a market participant view as rental property.

Hedge funds—Valued based upon the unit values of such alternative investments held at year end by the pension plans. Unit values are based on the fair value of the underlying assets of the fund.

Private equity—Valued based upon the unit values of such alternative investments held at year end by the pension plans. Unit values are based on the fair value of the underlying assets of the fund. Certain securities held in the fund are valued at the closing price reported on the exchange or other established quotation service for over-the-counter securities. Other assets held in the fund are valued based on the most recent financial statements prepared by the fund manager.

Convertible securities—Valued at the quoted prices for similar assets or liabilities in active markets.

U.S. government securities—Certain securities are valued at the closing price reported on the active market on which the individual securities are traded. Other securities are valued based on yields currently available on comparable securities of issuers with similar credit ratings.

Cash and cash equivalents—Valued at the quoted prices for similar assets or liabilities in active markets.

John Hancock group annuity contracts (“GAC”)—Valued at fair value by discounting the related cash flows based on current yields of similar instruments with comparable durations considering the credit-worthiness of the issuer.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The pension investments that are measured at fair value as of December 31, 2015 and 2014 are summarized below:

<u>Millions of dollars</u>	<u>December 31, 2015</u>			
	<u>Fair Value</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
U.S.				
Common and preferred stock:				
Domestic	\$ 347	\$344	\$ 3	\$—
International	296	296	—	—
Commingled funds measured at net asset value*:				
Domestic equity	72	—	—	—
International equity	216	—	—	—
Fixed income	285	—	—	—
Fixed income securities:				
Corporate bonds	217	—	217	—
Mortgage-backed securities	—	—	—	—
Municipal bonds	13	—	13	—
Foreign government issued bonds	—	—	—	—
Asset-backed securities	—	—	—	—
Real estate measured at net asset value*	97	—	—	—
Hedge funds measured at net asset value*	140	—	—	—
Private equity measured at net asset value*	60	—	—	—
Convertible securities	—	—	—	—
U.S. government securities:				
Agency securities	2	—	2	—
U.S. Treasury securities	34	34	—	—
Cash and cash equivalents	32	32	—	—
Total U.S. Pension Assets	<u>\$1,811</u>	<u>\$706</u>	<u>\$235</u>	<u>\$—</u>

<u>Millions of dollars</u>	<u>December 31, 2015</u>			
	<u>Fair Value</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
Non-U.S.				
Common stock	\$ 2	\$ 2	\$—	\$—
Commingled funds measured at net asset value*:				
Domestic equity	27	—	—	—
International equity	116	—	—	—
Fixed income	174	—	—	—
Fixed income securities	375	—	375	—
Cash and cash equivalents	28	28	—	—
Total Non-U.S. Pension Assets	<u>\$ 722</u>	<u>\$ 30</u>	<u>\$375</u>	<u>\$—</u>

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

<u>Millions of dollars</u>	December 31, 2014			
	Fair Value	Level 1	Level 2	Level 3
<u>U.S.</u>				
Common and preferred stock:				
Domestic	\$ 404	\$402	\$ 2	\$—
International	323	322	1	—
Commingled funds measured at net asset value*:				
Domestic equity	76	—	—	—
International equity	258	—	—	—
Fixed income	242	—	—	—
Fixed income securities:				
Corporate bonds	201	—	201	—
Mortgage-backed securities	13	—	13	—
Municipal bonds	6	—	6	—
Foreign government issued bonds	10	—	10	—
Asset-backed securities	4	—	4	—
Real estate measured at net asset value*	89	—	—	—
Hedge funds measured at net asset value*	129	—	—	—
Private equity measured at net asset value*	32	—	—	—
Convertible securities	1	—	1	—
U.S. government securities:				
Agency securities	95	—	95	—
U.S. Treasury securities	41	41	—	—
Cash and cash equivalents	25	25	—	—
John Hancock GACs	6	—	—	6
Total U.S. Pension Assets	\$1,955	\$790	\$333	\$ 6
<u>Non-U.S.</u>				
December 31, 2014				
<u>Millions of dollars</u>	Fair Value	Level 1	Level 2	Level 3
Common stock				
	\$ 2	\$ 2	\$—	\$—
Commingled funds measured at net asset value*:				
Domestic equity	29	—	29	—
International equity	130	—	130	—
Fixed income	178	—	178	—
Fixed income securities	365	—	365	—
Cash and cash equivalents	32	32	—	—
Total Non-U.S. Pension Assets	\$736	\$ 34	\$702	\$—

* In accordance with Fair Value Measurement Topic 820, Subtopic 10, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The amounts presented in this table are intended to facilitate reconciliation to the Consolidated Balance Sheets.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table sets forth a summary of changes in the fair value of the Level 3 plan assets for the years ended December 31, 2015 and 2014:

<u>Millions of dollars</u>	<u>John Hancock GACs</u>	<u>Total</u>
Balance at January 1, 2014	\$ 6	\$ 6
Realized gain	—	—
Unrealized gain (loss) related to investments still held at the reporting date	—	—
Purchases and sales:		
Purchases	—	—
Sales	—	—
Balance at December 31, 2014	6	6
Realized gain	—	—
Unrealized gain (loss) related to investments still held at the reporting date	—	—
Purchases and sales:		
Purchases	—	—
Sales	(6)	(6)
Balance at December 31, 2015	<u>\$—</u>	<u>\$—</u>

The fair value measurements of the investments in certain entities that calculate net asset value per share as of December 31, 2015 are as follows:

<u>Millions of dollars</u>	<u>Fair Value</u>	<u>Unfunded Commitments</u>	<u>Remaining Life</u>	<u>Redemption Frequency (if currently eligible)</u>	<u>Trade to Settlement Terms</u>	<u>Redemption Notice Period</u>
U.S.						
Commingled fund investing in Domestic Equity	\$ 72	\$—	N/A	daily, pending market condition	1 to 3 days	3 to 4 days
Commingled fund investing in International Equity ...	216	—	N/A	daily, pending market condition	1 to 3 days	3 days
Commingled fund investing in Fixed Income	285	—	N/A	daily, pending market condition	1 to 3 days	3 to 7 days
Real Estate	97	10	10 years	quarterly, pending market condition	15 to 25 days	45 to 90 days
Hedge Funds	140	—	N/A	quarterly, pending market condition	10 to 30 days	20 to 90 days
Private Equity	60	90	10 years	Not eligible	N/A	N/A
Total U.S.	<u>\$870</u>	<u>\$100</u>				

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Millions of dollars	Fair Value	Unfunded Commitments	Remaining Life	Redemption Frequency (if currently eligible)	Trade to Settlement Terms	Redemption Notice Period
Non-U.S.						
Commingled fund investing in Domestic Equity	\$ 27	\$—	N/A	1 to 7 days, pending market condition	1 to 3 days	1 to 3 days
Commingled fund investing in International Equity	116	—	N/A	1 to 7 days, pending market condition	1 to 3 days	1 to 3 days
Commingled fund investing in Fixed Income	174	—	N/A	daily, pending market condition	1 to 3 days	3 days
Total Non-U.S.	<u>\$317</u>	<u>\$—</u>				

The fair value measurements of the investments in certain entities that calculate net asset value per share as of December 31, 2014 are as follows:

Millions of dollars	Fair Value	Unfunded Commitments	Remaining Life	Redemption Frequency (if currently eligible)	Trade to Settlement Terms	Redemption Notice Period
U.S.						
Commingled fund investing in Domestic Equity ..	\$ 76	\$—	N/A	daily, pending market condition	1 to 3 days	3 to 4 days
Commingled fund investing in International Equity	258	—	N/A	daily, pending market condition	1 to 3 days	3 days
Commingled fund investing in Fixed Income	242	—	N/A	daily, pending market condition	1 to 3 days	3 to 7 days
Real Estate	89	13	10 years	quarterly, pending market condition	15 to 25 days	45 to 90 days
Hedge Funds	129	—	N/A	monthly, pending market condition	10 to 30 days	20 to 90 days
Private Equity	32	114	10 years	quarterly, pending market condition	N/A	N/A
Total U.S.	<u>\$826</u>	<u>\$127</u>				

Millions of dollars	Fair Value	Unfunded Commitments	Remaining Life	Redemption Frequency (if currently eligible)	Trade to Settlement Terms	Redemption Notice Period
Non-U.S.						
Commingled fund investing in Domestic Equity ...	\$ 29	\$—	N/A	1 to 7 days, pending market condition	1 to 3 days	1 to 3 days
Commingled fund investing in International Equity	130	—	N/A	1 to 7 days, pending market condition	1 to 3 days	1 to 3 days
Commingled fund investing in Fixed Income	178	—	N/A	daily, pending market condition	1 to 3 days	3 days
Total Non-U.S.	<u>\$337</u>	<u>\$—</u>				

The preceding methods described may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, although the Company believes its valuation

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

Multi-employer Plan—The Company participates in a multi-employer arrangement with, Pensionskasse der BASF WaG V.VaG (Pensionskasse), which provides for benefits to the majority of our employees in Germany. Up to a certain salary level, the benefit obligations are covered by contributions of the Company and the employees to the plan. Contributions made to the multi-employer plan are expensed as incurred.

The following table provides disclosure related to the Company’s multi-employer plan:

<u>Millions of dollars</u>	<u>Company Contributions</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Pensionskasse ^(a)	\$7	\$7	\$8

(a) The Company-specific plan information for the Pensionskasse is not publicly available and the plan is not subject to a collective-bargaining agreement. The plan provides fixed, monthly retirement payments on the basis of the credits earned by the participating employees. To the extent that the Pensionskasse is underfunded, the future contributions to the plan may increase and may be used to fund retirement benefits for employees related to other employers. The Pensionskasse financial statements for the years ended December 31, 2014 and 2013 indicated total assets of \$7,485 million and \$8,004 million, respectively; total actuarial present value of accumulated plan benefits of \$7,146 million and \$7,639 million, respectively; and total contributions for all participating employers of \$245 million and \$254 million, respectively. Our plan contributions did not exceed 5 percent of the total contributions in 2015, 2014 or 2013.

Other Postretirement Benefits—We sponsor unfunded health care and life insurance plans covering certain eligible retired employees and their eligible dependents. Generally, the medical plans pay a stated percentage of medical expenses reduced by deductibles and other coverage. Life insurance benefits are generally provided by insurance contracts. We retain the right, subject to existing agreements, to modify or eliminate these benefits.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table provides a reconciliation of benefit obligations of our unfunded other postretirement benefit plans:

Millions of dollars	Year Ended December 31,			
	2015		2014	
	U.S.	Non-U.S.	U.S.	Non-U.S.
Change in benefit obligation:				
Benefit obligation, beginning of period	\$ 347	\$ 60	\$ 310	\$ 41
Service cost	4	1	4	1
Interest cost	13	2	15	2
Plan amendments	—	—	1	—
Actuarial (gain) loss	(64)	—	32	24
Benefits paid	(22)	(1)	(22)	(1)
Participant contributions	7	—	7	—
Foreign exchange effects	—	(6)	—	(7)
Benefit obligation, end of period	<u>285</u>	<u>56</u>	<u>347</u>	<u>60</u>
Change in plan assets:				
Fair value of plan assets, beginning of period	—	—	—	—
Employer contributions	15	1	15	1
Participant contributions	7	—	7	—
Benefits paid	(22)	(1)	(22)	(1)
Fair value of plan assets, end of period	—	—	—	—
Funded status, end of period	<u>\$(285)</u>	<u>\$(56)</u>	<u>\$(347)</u>	<u>\$(60)</u>
Amounts recognized in the Consolidated Balance Sheets consist of:				
Accrued benefit liability, current	\$ (19)	\$ (1)	\$ (24)	\$ (1)
Accrued benefit liability, long-term	(266)	(55)	(323)	(59)
Funded status, end of period	<u>\$(285)</u>	<u>\$(56)</u>	<u>\$(347)</u>	<u>\$(60)</u>
Amounts recognized in the Accumulated other comprehensive income (loss):				
Actuarial and investment income (loss)	\$ 18	\$ (30)	\$ (48)	\$ (31)
Balance, end of period	<u>\$ 18</u>	<u>\$(30)</u>	<u>\$(48)</u>	<u>\$(31)</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table provides the components of net periodic other postretirement benefit costs:

<u>Millions of dollars</u>	<u>U.S. Plans</u>		
	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Net Periodic Other Postretirement Cost:			
Service cost	\$ 4	\$ 4	\$ 5
Interest cost	13	15	12
Actuarial loss amortization	<u>2</u>	<u>2</u>	<u>1</u>
Net periodic benefit cost	<u>\$19</u>	<u>\$21</u>	<u>\$18</u>

<u>Millions of dollars</u>	<u>Non-U.S. Plans</u>		
	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Net Periodic Other Postretirement Cost:			
Service cost	\$ 1	\$ 1	\$ 1
Interest cost	2	1	1
Actuarial loss amortization	<u>3</u>	<u>1</u>	<u>1</u>
Net periodic benefit cost	<u>\$ 6</u>	<u>\$ 3</u>	<u>\$ 3</u>

The following table sets forth the assumed health care cost trend rates:

	<u>U.S. Plans</u>	
	<u>At December 31,</u>	
	<u>2015</u>	<u>2014</u>
Assumed health care trend rate:		
Immediate trend rate	7.3%	7.3%
Ultimate trend rate (the rate to which the cost trend rate is assumed to decline)	4.5%	4.5%
Year that the rate reaches the ultimate trend rate	2038	2027

	<u>Non-U.S. Plans</u>			
	<u>Canada</u>		<u>France</u>	
	<u>At December 31,</u>		<u>At December 31,</u>	
	<u>2015</u>	<u>2014</u>	<u>2015</u>	<u>2014</u>
Assumed health care trend rate:				
Immediate trend rate	6.5%	6.5%	4.9%	5.0%
Ultimate trend rate (the rate to which the cost trend rate is assumed to decline)	5.0%	5.0%	4.9%	5.0%
Year that the rate reaches the ultimate trend rate	2018	2018	—	—

The health care cost trend rate assumption does not typically have a significant effect on the amounts reported due to limits on maximum contribution levels to the medical plans. However, changing the assumed health care cost trend rates by one percentage point in each year would increase or decrease the accumulated other postretirement benefit liability as of December 31, 2015 by less than \$1 million for U.S. and non-U.S. plans and would not have a material effect on the aggregate service and interest cost components of the net periodic other postretirement benefit cost for the year then ended.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The assumptions used in determining the net benefit liabilities for our other postretirement benefit plans were as follows:

	At December 31,			
	2015		2014	
	U.S.	Non-U.S.	U.S.	Non-U.S.
Weighted average assumptions:				
Discount rate	4.23%	2.69%	3.85%	2.92%
Rate of compensation increase	4.00%	0.00%	4.00%	0.00%

The assumptions used in determining the net benefit costs for our other postretirement benefit plans were as follows:

	Year Ended December 31,					
	2015		2014		2013	
	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.
Weighted average assumptions for the year:						
Discount rate	3.85%	2.92%	4.53%	3.99%	3.73%	3.80%
Rate of compensation increase	4.00%	0.00%	4.00%	3.00%	4.00%	3.00%

As of December 31, 2015, future expected benefit payments by our other postretirement benefit plans, which reflect expected future service, as appropriate, were as follows:

Millions of dollars	U.S.	Non-U.S.
2016	\$ 19	\$1
2017	20	1
2018	21	1
2019	21	1
2020	22	1
2021 through 2025	105	7

Accumulated Other Comprehensive Income (Loss)—The following pretax amounts were recognized in accumulated other comprehensive income (loss) as of and for the years ended December 31, 2015 and 2014:

Millions of dollars	Pension Benefits		Other Benefits	
	Actuarial (Gain) Loss	Prior Service Cost (Credit)	Actuarial (Gain) Loss	Prior Service Cost (Credit)
December 31, 2013	\$143	\$ 17	\$ 28	\$ (1)
Arising during the period	439	(6)	54	1
Amortization	(4)	—	(3)	—
December 31, 2014	578	11	79	—
Arising during the period	71	—	(63)	—
Amortization	(24)	(5)	(4)	—
December 31, 2015	<u>\$625</u>	<u>\$ 6</u>	<u>\$ 12</u>	<u>\$—</u>

In 2015, \$71 million of pension benefits actuarial loss primarily reflects \$62 million of gains due to changes in discount rate assumption offset by \$133 million of losses due to asset experience (actual asset return compared to expected return) and other immaterial liability experience gains and losses. There were \$63 million of other

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

postretirement benefits actuarial gains due to \$11 million of discount rate assumption changes, \$37 million of changes due to favorable liability experience, \$13 million due to healthcare assumptions and other immaterial items. In 2014, \$493 million of actuarial losses primarily reflect \$409 million of discount rate assumption changes, \$84 million of losses resulting from adoption of a new mortality table in the U.S., and other immaterial liability experience gains and losses.

Deferred income taxes related to amounts in Accumulated other comprehensive income (loss) include provisions of \$216 million and \$220 million as of December 31, 2015 and 2014, respectively.

At December 31, 2015, Accumulated other comprehensive income (loss) of \$7 million represents net actuarial and investment losses related to non-U.S. pension plans that are expected to be recognized as a component of net periodic benefit cost in 2016. There are \$21 million of net actuarial and investment losses in AOCI at December 31, 2015 for U.S. pension plans expected to be recognized in net periodic benefit cost in 2016. At December 31, 2015, AOCI included \$3 million of net actuarial loss related to non-U.S. other postretirement benefits that is expected to be recognized in net periodic benefit cost in 2016.

Defined Contribution Plans—Most employees in the U.S. and certain non-U.S. countries are eligible to participate in defined contribution plans by contributing a portion of their compensation. We also make employer contributions, such as matching contributions, to certain of these plans. The Company has a nonqualified deferred compensation plan that covers senior management in the U.S. The plan was amended in April, 2013 to provide for company contributions on behalf of certain eligible employees who earn base pay above the IRS annual compensation limit. We recognized less than \$1 million of compensation expense related to the plan amendment in 2014.

The following table provides the company contributions to the Employee Savings Plans:

Millions of dollars	Company Contributions					
	2015		2014		2013	
	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.
Employee Savings Plans	\$32	\$4	\$32	\$5	\$30	\$3

17. Incentive and Share-Based Compensation

Under our Long-Term Incentive Plan (“LTI”), which was approved by shareholders in 2012, the Compensation Committee is authorized to grant restricted stock, restricted stock units, stock options, qualified performance awards, stock appreciation rights and other types of equity-based awards. The Compensation Committee determines the recipients of the equity awards, the type of award(s) made, the required performance measures, and the timing and duration of each grant. The maximum number of shares of LyondellBasell N.V. common stock reserved for issuance under the LTI is 22,000,000. As of December 31, 2015, there were 8,006,697 shares remaining available for issuance. Upon share exercise or payment, shares are issued from our treasury shares.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Total share-based compensation expense and the associated tax benefits are as follows for the years ended December 31:

<u>Millions of dollars</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>
Compensation Expense:			
Restricted stock units	\$ 11	\$ 11	\$ 16
Stock options	6	5	10
Restricted stock	—	—	5
Qualified performance awards	25	15	11
Performance share units	<u>11</u>	<u>6</u>	<u>—</u>
Total	<u>\$ 53</u>	<u>\$ 37</u>	<u>\$ 42</u>
Tax Benefit:			
Restricted stock units	\$ 4	\$ 4	\$ 6
Stock options	2	2	4
Restricted stock	—	—	2
Qualified performance awards	9	5	4
Performance share units	<u>4</u>	<u>2</u>	<u>—</u>
Total	<u>\$ 19</u>	<u>\$ 13</u>	<u>\$ 16</u>

Restricted Stock Unit Awards—Restricted stock unit awards (“RSUs”) generally entitle the recipient to be paid out an equal number of ordinary shares on the fifth anniversary of the grant date. Beginning in 2014, RSUs are generally vested and shares are delivered on the third anniversary of the grant date. RSUs, which are subject to customary accelerated vesting or forfeiture in the event of certain termination events, are accounted for as an equity award with compensation cost recognized in the income statement ratably over the vesting period.

In January 2015, 190,399 RSUs were granted to the Chief Executive Officer (“CEO”) and three other executive officers. These RSUs vest in annual tranches with 10% vested after one year and an additional 15% vested after two years and the remaining vesting in equal tranches after each of the third, fourth, and fifth years. Compensation cost for these awards is recognized using the graded vesting method.

The holders of RSUs are entitled to dividend equivalents to be settled no later than March 15, following the year in which dividends are paid, as long as the participant is in full employment at the time of the dividend payment. See the “Dividend Distribution” section of Note 20 for the per share amount of dividend equivalent payments made to the holders of RSUs during 2015, 2014 and 2013. Total dividend equivalent payments were \$2 million, \$4 million and \$3 million for 2015, 2014 and 2013, respectively.

RSUs are valued at the market price of the underlying stock on the date of grant. The weighted average grant date fair value for RSUs granted during the years ended December 31, 2015, 2014 and 2013 was \$83.31, \$91.66 and \$63.26, respectively. The total fair value of RSUs vested during 2015, 2014 and 2013 was \$120 million, \$30 million and \$11 million respectively.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The following table summarizes RSU activity for the year ended December 31, 2015:

	<u>Number of Units (in thousands)</u>	<u>Weighted Average Grant Date Fair Value (per share)</u>
Outstanding at January 1, 2015	1,425	\$24.30
Granted	277	83.31
Vested	(1,217)	20.35
Forfeited	<u>(87)</u>	<u>77.49</u>
Outstanding at December 31, 2015	<u>398</u>	<u>\$65.80</u>

As of December 31, 2015, the unrecognized compensation cost related to RSUs was \$15 million, which is expected to be recognized over a weighted average period of 2 years.

Stock Options—Stock options are granted with an exercise price equal to the market price of our ordinary shares at the date of grant. The stock options are accounted for as an equity award with compensation cost recognized using the graded vesting method. On April 30, 2010, we issued stock options to our former Chief Executive Officer, which entitled him to purchase 5,639,020 of our ordinary shares. These options vested in five equal, annual installments beginning on May 14, 2010 and were exercisable through April 30, 2017. These options were granted with an exercise price of \$17.61 per share, which was the fair value of the Company’s ordinary shares based on its reorganized value at the date of emergence.

All other stock options granted before May 4, 2011 vested in equal increments on the second, third, and fourth anniversary of the grant date, and options granted on and after May 4, 2011 vest in equal increments on the first, second, and third anniversary of the grant date. These options have a contractual term of ten years and are subject to customary accelerated vesting or forfeiture in the event of certain termination events. Exercise prices for these options range from \$11.95 to \$113.03.

In January 2015, 457,555 stock options were granted to the Chief Executive Officer and three other executive officers. These stock options vest in annual tranches with 10% vested after one year and an additional 15% vested after two years and the remaining vesting in equal tranches after each of the third, fourth, and fifth years.

The fair value of each stock option award is estimated, based on several assumptions, on the date of grant using the Black-Scholes option valuation model. The principal assumptions utilized in valuing stock options include the expected stock price volatility (based on LyondellBasell N.V.’s historic stock price volatility over the expected term); the expected dividend yield; and the risk-free interest rate (an estimate based on the yield of United States Treasury zero coupon bond with a maturity equal to the expected life of the option).

The expected term of all options granted is estimated based on a simplified approach. In 2010, when the majority of our options were granted, we determined that the simplified method was appropriate because of the life of LyondellBasell N.V. and its relative stage of development. Similarly, we did not possess exercise patterns in similar situations as LyondellBasell N.V.’s situation. The option grants that have been made since 2010 have been limited in number and have occurred during periods of substantial share price escalation.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Weighted average fair values of stock options granted in each respective year and the assumptions used in estimating those fair values are as follows:

	<u>2015</u>	<u>2014</u>	<u>2013</u>
Weighted average fair value	\$ 22.71	\$ 33.06	\$ 22.16
Fair value assumptions:			
Dividend yield	3.00%	3.00%	3.00%
Expected volatility	35.9-37.0%	46.0-49.0%	51.0%
Risk-free interest rate	1.48-1.93%	1.81-1.98%	0.95-1.27%
Weighted average expected term, in years	6.0-6.7	6.0	6.0

The following table summarizes stock option activity for the year ended December 31, 2015 for the non-qualified stock options:

	<u>Number of Shares (in thousands)</u>	<u>Weighted Average Exercise Price</u>	<u>Weighted Average Remaining Term</u>	<u>Aggregate Intrinsic Value (millions of dollars)</u>
Outstanding at January 1, 2015	4,185	\$18.74		
Granted	680	82.42		
Exercised	(3,919)	16.07		
Forfeited	(166)	87.09		
Outstanding at December 31, 2015	<u>780</u>	<u>\$73.15</u>	8.1 years	<u>\$12</u>
Exercisable at December 31, 2015	<u>167</u>	<u>\$41.12</u>	4.7 years	<u>\$ 8</u>

The aggregate intrinsic value of stock options exercised during the years ended December 31, 2015, 2014 and 2013 was \$280 million, \$98 million and \$71 million, respectively.

As of December 31, 2015, the unrecognized compensation cost related to non-qualified stock options was \$8 million, which is expected to be recognized over a weighted average period of 2 years. During 2015, cash received from option exercises was \$61 million and tax benefits realized from stock options exercised was \$102 million.

Restricted Stock—On April 30, 2010, we issued 1,771,794 restricted shares to our former CEO. All of the restricted shares were vested as of December 31, 2013. An aggregate of 439,085 of the vested restricted shares were withheld in payment of withholding tax obligations during 2013.

Restricted stock was valued at the market price of the underlying stock on the date of grant. No other restricted stock has been granted. The total fair value of restricted stock vested during the year ended December 31, 2013 was \$69 million. As of December 31, 2013, all restricted stock shares were vested and fully expensed.

Medium-Term Incentive Program (“MTI”), Qualified Performance Awards (“QPA”) and Performance Share Units (“PSU”)—Shares issued in satisfaction of PSU, QPA, and MTI awards are granted under our 2012 Amended and Restated Long-Term Incentive Plan, which was approved by shareholders at our 2012 annual meeting. Share awards under QPA and PSU are similar. The target number of share awards is established at the beginning of a three-calendar year performance period. Each unit is equivalent to one share of LyondellBasell N.V. common stock. The final number of LyondellBasell N.V. shares payable is determined at the end of the

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

three-calendar year performance period by the Compensation Committee of the Supervisory Board. Since the service-inception date precedes the grant date, these share awards are treated as a liability award until the grant date and compensation expense during the three-calendar year performance period is accrued on a straight-line basis subject to fair value adjustments. These share awards are subject to customary accelerated vesting and forfeiture in the event of certain termination events. They are classified in Accrued and Other liabilities on the Consolidated Balance Sheets. For the fair value of the share awards, see Note 15. For grants made in 2012 and 2013, eligible employees other than executive officers could elect to receive share-based awards or cash-based awards (MTI) while executive officers were only eligible for the share-based awards. Awards under the MTI are accounted for as a liability and classified in Other liabilities on the Consolidated Balance Sheets. We recorded compensation expense for cash MTI awards of \$10 million, \$9 million and \$17 million for the years ended December 31, 2015, 2014 and 2013, respectively, based on the expected achievement of performance results.

Employee Stock Purchase Plan

At the 2015 Annual General Meeting, shareholders approved an amendment to the Company's Employee Share Purchase Plan ("ESPP") effective October 1, 2015. The amended plan includes a 10% discount and a look-back provision which allows for participants to receive a discount on the lower of the fair market value at the beginning or end of the purchase period. As a result of the 10% discount and the look-back provision, the ESPP is considered a compensatory plan under generally accepted accounting principles.

Prior to 2015, the ESPP enabled eligible employees to make quarterly purchases of shares of LyondellBasell N.V. common stock at a 5% discount and was considered a non-compensatory plan under generally accepted accounting principles.

18. Income Taxes

LyondellBasell N.V. moved its tax residence from The Netherlands, where LyondellBasell N.V. is incorporated, to the United Kingdom effective as of July 1, 2013 pursuant to a mutual agreement procedure determination ruling between the Dutch and United Kingdom competent authorities. Pursuant to this ruling, LyondellBasell N.V. is treated solely as a tax resident in the United Kingdom and is subject to the United Kingdom corporate income tax system.

Through our subsidiaries, we have substantial operations world-wide and in recent years have earned significant income in the United States. Taxes are primarily paid on the earnings generated in various jurisdictions, including the United States, The Netherlands, Germany, France, Italy and other countries. LyondellBasell N.V. has little or no taxable income of its own because, as a holding company, it does not conduct any operations. Instead, the subsidiaries through which we operate incur tax obligations in the jurisdictions in which they operate.

A portion of the Company's interest income from internal financing is either untaxed or taxed at rates substantially lower than the U.S. statutory rate. This treatment may be prospectively impacted by potential changes in the law, including adoption of certain proposals for base erosion and profit shifting.

We monitor income tax legislative developments in countries where we conduct business, including the United Kingdom. Management does not believe that recent changes in income tax laws will have a material impact on our Consolidated Financial Statements, although new or proposed changes to tax laws could affect our tax liabilities in the future.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The significant components of the provision for income taxes are as follows:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Current:			
U.S. federal	\$1,009	\$ 985	\$ 969
Non-U.S.	468	277	135
State	72	101	78
Total current	<u>1,549</u>	<u>1,363</u>	<u>1,182</u>
Deferred:			
U.S. federal	66	122	218
Non-U.S.	104	50	(270)
State	11	5	6
Total deferred	<u>181</u>	<u>177</u>	<u>(46)</u>
Provision for income taxes before tax effects of other comprehensive income . . .	1,730	1,540	1,136
Tax effects of elements of other comprehensive income:			
Pension and postretirement liabilities	4	(172)	149
Financial derivatives	71	4	—
Foreign currency translation	(5)	—	(4)
Unrealized gain from available-for-sale securities	(1)	—	—
Total income tax expense in comprehensive income	<u>\$1,799</u>	<u>\$1,372</u>	<u>\$1,281</u>

We are incorporated in The Netherlands and are a tax resident of the United Kingdom. However, since the proportion of U.S. revenues, assets, operating income and associated tax provisions is significantly greater than any other single taxing jurisdiction within the worldwide group, the reconciliation of the differences between the provision for income taxes and the statutory rate is presented on the basis of the U.S. statutory federal income tax rate of 35% as opposed to the United Kingdom statutory rate of 20% to provide a more meaningful insight into those differences. Our effective tax rate for the year ended December 31, 2015 is 27.9%. This summary is shown below:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Income before income taxes:			
U.S.	\$3,691	\$3,743	\$3,912
Non-U.S.	2,518	1,969	1,084
Total	<u>\$6,209</u>	<u>\$5,712</u>	<u>\$4,996</u>
Income tax at U.S. statutory rate	\$2,173	\$1,999	\$1,749
Increase (reduction) resulting from:			
Non-U.S. income taxed at lower statutory rates	(130)	(61)	(60)
State income taxes, net of federal benefit	59	64	58
Changes in valuation allowances	8	3	(353)
Exempt income	(319)	(275)	(109)
U.S. manufacturing deduction	(88)	(106)	(96)
Other, net	27	(84)	(53)
Income tax provision	<u>\$1,730</u>	<u>\$1,540</u>	<u>\$1,136</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The deferred tax effects of tax loss and credit carryforwards (“tax attributes”) and the tax effects of temporary differences between the tax basis of assets and liabilities and their reported amounts in the Consolidated Financial Statements, reduced by a valuation allowance where appropriate, are presented below:

<u>Millions of dollars</u>	<u>December 31,</u>	
	<u>2015</u>	<u>2014</u>
Deferred tax liabilities:		
Accelerated tax depreciation	\$1,519	\$1,464
Investment in joint venture partnerships	300	276
Intangible assets	215	264
Inventory	440	528
Other liabilities	124	58
Total deferred tax liabilities	2,598	2,590
Deferred tax assets:		
Tax attributes	322	409
Employee benefit plans	406	468
Other assets	73	93
Total deferred tax assets	801	970
Deferred tax asset valuation allowances	(125)	(134)
Net deferred tax assets	676	836
Net deferred tax liabilities	\$1,922	\$1,754

<u>Millions of dollars</u>	<u>December 31,</u>	
	<u>2015</u>	<u>2014</u>
Balance sheet classifications:		
Deferred tax assets—current	\$ —	\$ 67
Deferred tax assets—long-term	205	271
Deferred tax liability—current	—	469
Deferred tax liability—long-term	2,127	1,623
Net deferred tax liabilities	\$1,922	\$1,754

In the table above, which has been prospectively adjusted, we have conformed our 2015 deferred balances to early adopt FASB ASU 2015-17 as a part of the FASB simplification initiative that is effective in 2017.

At December 31, 2015 and 2014, we had total tax attributes available in the amount of \$1,082 million and \$1,340 million, respectively, for which a deferred tax asset was recognized at December 31, 2015 and 2014 of \$322 million and \$409 million, respectively.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The scheduled expiration of the tax attributes and the related deferred tax asset, before valuation allowance, as of December 31, 2015 are as follows:

<u>Millions of dollars</u>	<u>Tax Attributes</u>	<u>Deferred Tax on Tax Attributes</u>
2016	\$ 4	\$ 2
2017	1	—
2018	31	11
2019	41	10
2020	—	—
Thereafter	192	42
Indefinite	813	257
	<u>\$1,082</u>	<u>\$322</u>

The tax attributes are primarily related to operations in France, Canada, the United Kingdom, Spain, The Netherlands and the United States. The related deferred tax assets by primary jurisdictions are shown below:

<u>Millions of dollars</u>	<u>December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
France	\$197	\$261	\$323
Canada	31	38	70
United Kingdom	17	25	27
Spain	38	52	56
The Netherlands	23	13	13
United States	15	15	15
Other	1	5	10
	<u>\$322</u>	<u>\$409</u>	<u>\$514</u>

In order to fully realize these net deferred tax assets, we will need to generate sufficient future taxable income in the countries where these tax attributes exist during the periods in which the attributes can be utilized. Based upon projections of future taxable income over the periods in which the attributes can be utilized and/or temporary differences can be reversed, management believes it is more likely than not that only \$200 million of these deferred tax assets at December 31, 2015 will be realized.

Prior to the close of each reporting period, management considers the weight of all evidence, both positive and negative, to determine if a valuation allowance is necessary for each jurisdictions' net deferred tax assets. We place greater weight on historical evidence over future predictions of our ability to utilize net deferred tax assets. We consider future reversals of existing taxable temporary differences, future taxable income exclusive of reversing temporary differences, and taxable income in prior carryback year(s) if carryback is permitted under applicable law, as well as available prudent and feasible tax planning strategies that would, if necessary, be implemented to ensure realization of the net deferred tax asset.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

A summary of the valuation allowances by primary jurisdiction is shown below, reflecting the valuation allowances for all the net deferred tax assets, including deferred tax assets for tax attributes and other temporary differences.

<u>Millions of dollars</u>	<u>December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
France	\$ 27	\$ 29	\$ 34
Canada	33	41	78
United Kingdom	11	13	14
Spain	19	24	16
The Netherlands	20	13	13
United States	14	14	12
Other	1	—	—
	<u>\$125</u>	<u>\$134</u>	<u>\$167</u>

During 2015, the reduction in our valuation allowances was primarily attributable to currency translation adjustments, partially offset by an increase of the valuation allowance on The Netherlands tax attributes.

During 2014, the change in our valuation allowances primarily related to the expiration of \$99 million of Canadian tax loss carryforwards for which a full valuation allowance had been provided on the associated deferred tax asset of \$26 million. Additionally, our valuation allowances were impacted by adjustments related to current year activity.

During 2013, we released approximately \$344 million of our valuation allowance related to our French operations. Of this amount, approximately \$52 million was related to 2013 activity. The remaining \$292 million of valuation allowance was released to earnings in the fourth quarter of 2013. In regard to this decision, management considered the following new evidence related to our French operations:

- Beginning in the second quarter of 2013, we began generating cumulative three-year pretax income;
- During 2013, we had three consecutive quarters of cumulative three-year pretax income and had reported two consecutive years of pretax income, a sufficient trend of sustained profitability to establish an expectation that the valuation allowance will more likely than not be realized;
- Existence of cumulative pretax income from core operations for the prior three years (2011-2013); exclusive of results related to discontinued operations;
- Existence of taxable income for 2013 before utilization of tax loss carryforwards;
- 2013 projections of significant pretax income for years 2014-2018; and
- 2013 projections of significant taxable income for years 2014-2018, exclusive of reversing taxable temporary differences.

French tax law provides for an indefinite carryforward of tax losses; however, losses allowed in any particular year may not exceed fifty percent of taxable income. With respect to our French operations, we have a total net deferred tax asset of \$163 million, of which we retain a valuation allowance of \$27 million relating to losses that the Company does not expect to realize a future benefit due to limitations imposed by French tax law. The remaining portion of the net deferred tax asset of \$136 million, previously covered by a valuation allowance, primarily related to French tax losses, is expected to be fully realized.

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For 2013, in addition to the release of \$344 million of our valuation allowance related to our French operation, we released the valuation allowance related to United Kingdom net deferred tax assets associated with operating losses as the United Kingdom operations are not in a three-year cumulative loss position and our projections indicate and management now expects the operating losses will be fully utilized within the next ten years. We continue to provide a valuation allowance associated with non-operating losses for the United Kingdom.

For valuation allowances in Canada and Spain, we continue to maintain valuation allowances against the net deferred tax assets in these jurisdictions given their cumulative three year losses and/or limited future reversal of deferred tax liabilities. This consideration precludes a determination that it is more likely than not that the net deferred tax assets will be realized. Although Spain operations are in a cumulative three year loss, current earnings are favorable and these trends are expected to continue in the near future. We are monitoring for future realization of our deferred tax assets.

Deferred taxes on the unremitted earnings of certain equity joint ventures and subsidiaries of \$51 million and \$52 million at December 31, 2015 and 2014, respectively, have been provided to the extent that such earnings are subject to taxation on their future remittance.

Tax benefits totaling \$464 million, \$475 million and \$495 million relating to uncertain tax positions, which are reflected in Other liabilities, were unrecognized as of December 31, 2015, 2014 and 2013, respectively. The following table presents a reconciliation of the beginning and ending amounts of unrecognized tax benefits:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Balance, beginning of period	\$475	\$495	\$548
Additions for tax positions of current year	11	12	11
Additions for tax positions of prior years	5	12	7
Reductions for tax positions of prior years	(24)	(40)	(66)
Settlements (payments/refunds)	(3)	(4)	(5)
Balance, end of period	<u>\$464</u>	<u>\$475</u>	<u>\$495</u>

The majority of the 2015, 2014 and 2013 balances, if recognized, will affect the effective tax rate. We operate in multiple jurisdictions throughout the world, and our tax returns are periodically audited or subjected to review by tax authorities. We are no longer subject to any significant income tax examinations by tax authorities for the years prior to 2013 in The Netherlands, prior to 2010 in Italy, prior to 2010 in Germany, prior to 2008 in France, prior to 2014 in the United Kingdom, and prior to 2011 in the U.S., our principal tax jurisdictions. We do not expect any significant changes in the amounts of unrecognized tax benefits during the next 12 months.

19. Commitments and Contingencies

Commitments—We have various purchase commitments for materials, supplies and services incident to the ordinary conduct of business, generally for quantities required for our businesses and at prevailing market prices. These commitments are designed to assure sources of supply and are not expected to be in excess of normal requirements. Our capital expenditure commitments at December 31, 2015 were in the normal course of business.

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Financial Assurance Instruments—We have obtained letters of credit, performance and surety bonds and have issued financial and performance guarantees to support trade payables, potential liabilities and other obligations. Considering the frequency of claims made against the financial instruments we use to support our obligations, and the magnitude of those financial instruments in light of our current financial position, management does not expect that any claims against or draws on these instruments would have a material adverse effect on our Consolidated Financial Statements. We have not experienced any unmanageable difficulty in obtaining the required financial assurance instruments for our current operations.

Environmental Remediation—Our accrued liability for future environmental remediation costs at current and former plant sites and other remediation sites totaled \$106 million as of December 31, 2015. The accrued liabilities for individual sites range from less than \$1 million to \$17 million. The remediation expenditures are expected to occur over a number of years, and not to be concentrated in any single year. In our opinion, it is reasonably possible that losses in excess of the liabilities recorded may have been incurred. However, we cannot estimate any amount or range of such possible additional losses. New information about sites, new technology or future developments such as involvement in investigations by regulatory agencies, could require us to reassess our potential exposure related to environmental matters.

The following table summarizes the activity in our accrued environmental liability included in “Accrued liabilities” and “Other liabilities:”

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>	
	<u>2015</u>	<u>2014</u>
Beginning balance	\$106	\$120
Additional provisions	20	6
Changes in estimates	2	—
Amounts paid	(14)	(8)
Foreign exchange effects	(8)	(9)
Other	—	(3)
Ending balance	<u>\$106</u>	<u>\$106</u>

Access Indemnity Demand—In December 2010, one of our subsidiaries received demand letters from affiliates of Access Industries (collectively, “Access Entities”), a more than five percent shareholder of the Company, demanding indemnity for losses, including attorney’s fees and expenses, arising out of a pending lawsuit styled *Edward S. Weisfelner, as Litigation Trustee of the LB Litigation Trust v. Leonard Blavatnik, et al.*, Adversary Proceeding No. 09-1375 (REG), in the United States Bankruptcy Court, Southern District of New York. In the *Weisfelner* lawsuit, the plaintiffs seek to recover from Access the return of all amounts earned by the Access Entities related to their purchase of shares of Lyondell Chemical prior to its acquisition by Basell AF S.C.A.; distributions by Basell AF S.C.A. to its shareholders before it acquired Lyondell Chemical; and management and transaction fees and expenses. The trial that was scheduled for October 2011 has been postponed.

The Access Entities have also demanded \$100 million in management fees under a 2007 management agreement between an Access affiliate and the predecessor of LyondellBasell AF, as well as other unspecified amounts relating to advice purportedly given in connection with financing and other strategic transactions. In June 2009, an Access affiliate filed a proof of claim in Bankruptcy Court against LyondellBasell AF seeking “no less than” \$723 thousand for amounts allegedly owed under the 2007 management agreement. In April 2011, Lyondell Chemical filed an objection to the claim and brought a declaratory judgment action for a determination that the demands are not valid. The declaratory judgment action is stayed pending the outcome of the *Weisfelner* lawsuit.

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We do not believe that the 2007 management agreement is in effect or that the Company or any Company-affiliated entity owes any obligations under the management agreement, including for management fees or for indemnification. We intend to vigorously defend our position in any proceedings and against any claims or demands that may be asserted.

We cannot at this time estimate the reasonably possible loss or range of loss that may be incurred in the *Weisfelner* lawsuit; therefore, we cannot estimate the loss that may be sought by way of indemnity.

409A Matter—Certain of the Company’s current and former executives are being audited by the Internal Revenue Service for the 2012 tax year. The IRS has issued proposed assessments of additional taxes to these individuals for wages and penalties under Section 409A of the Internal Revenue Code. The IRS has argued that stock options awarded to the individuals in 2010 in connection with the Company’s emergence from bankruptcy should not have used the exercise price set under the bankruptcy court approved plan of reorganization but instead should have used an exercise price based on pre-emergence trading by parties not controlled by the Company. If the individuals are unsuccessful in their defenses against these audits, or any audits for subsequent tax years, the Company believes it is reasonably possible that it may be liable to the individual executive taxpayers for the additional amounts they may owe to the IRS as a result of the stock options allegedly not meeting the exemption from Section 409A. Any amount that may be owed by the Company is dependent on the ultimate resolution of the IRS audits, but the Company believes that such amount could range from no liability to up to \$165 million. The Company intends to vigorously defend its compensation practices.

Indemnification—We are parties to various indemnification arrangements, including arrangements entered into in connection with acquisitions, divestitures and the formation and dissolution of joint ventures. Pursuant to these arrangements, we provide indemnification to and/or receive indemnification from other parties in connection with liabilities that may arise in connection with the transactions and in connection with activities prior to completion of the transactions. These indemnification arrangements typically include provisions pertaining to third party claims relating to environmental and tax matters and various types of litigation. As of December 31, 2015, we had not accrued any significant amounts for our indemnification obligations, and we are not aware of other circumstances that would likely lead to significant future indemnification obligations. We cannot determine with certainty the potential amount of future payments under the indemnification arrangements until events arise that would trigger a liability under the arrangements.

As part of our technology licensing contracts, we give indemnifications to our licensees for liabilities arising from possible patent infringement claims with respect to certain proprietary licensed technologies. Such indemnifications have a stated maximum amount and generally cover a period of five to ten years.

20. Stockholders’ Equity

Dividend Distribution—The following table summarizes the dividends paid in the periods presented:

<u>Millions of dollars, except per share amounts</u>	<u>Dividend Per Ordinary Share</u>	<u>Aggregate Dividends Paid</u>	<u>Date of Record</u>
For the year 2015:			
March	\$0.70	\$ 334	March 2, 2015
June	0.78	368	June 1, 2015
September	0.78	361	August 25, 2015
December	0.78	347	November 23, 2015
	<u>\$3.04</u>	<u>\$1,410</u>	

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<u>Millions of dollars, except per share amounts</u>	<u>Dividend Per Ordinary Share</u>	<u>Aggregate Dividends Paid</u>	<u>Date of Record</u>
For the year 2014:			
March	\$0.60	\$ 327	March 3, 2014
May	0.70	370	April 28, 2014
September	0.70	358	August 25, 2014
December	<u>0.70</u>	<u>348</u>	November 24, 2014
	<u>\$2.70</u>	<u>\$1,403</u>	

Share Repurchase Program—We completed the repurchase of shares under share repurchase programs authorized by our shareholders in April 2014 (“April 2014 Share Repurchase Program”) and May 2013 (“May 2013 Share Repurchase Program”) in 2015 and 2014, respectively. We were authorized to purchase up to 10% of our outstanding shares under each of these programs. In May 2015, our shareholders approved a proposal to authorize us to repurchase up to an additional 10% of our outstanding ordinary shares through November 2016 (“May 2015 Share Repurchase Program”). These repurchases, which are determined at the discretion of our Management Board, may be executed from time to time through open market or privately negotiated transactions. The repurchased shares, which are recorded at cost, are classified as Treasury stock and may be retired or used for general corporate purposes, including for various employee benefit and compensation plans.

The following table summarizes our share repurchase activity for the periods presented:

<u>Millions of dollars, except shares and per share amounts</u>	<u>Shares Repurchased</u>	<u>Average Purchase Price</u>	<u>Total Purchase Price, Including Commissions</u>
For the year 2015:			
April 2014 Share Repurchase Program	19,892,101	\$86.40	\$1,719
May 2015 Share Repurchase Program	<u>31,947,812</u>	<u>90.66</u>	<u>2,896</u>
	<u>51,839,913</u>	<u>\$89.03</u>	<u>\$4,615</u>
For the year 2014:			
May 2013 Share Repurchase Program	30,225,236	\$90.31	\$2,730
April 2014 Share Repurchase Program	<u>33,070,101</u>	<u>95.08</u>	<u>3,143</u>
	<u>63,295,337</u>	<u>\$92.80</u>	<u>\$5,873</u>
For the year 2013:			
May 2013 Share Repurchase Program	27,359,002	\$71.22	\$1,949

Due to the timing of settlements, total cash paid for share repurchases for the years ended December 31, 2015 and 2014 was \$4,656 million and \$5,788 million, respectively.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Ordinary Shares—The changes in the outstanding amounts of ordinary shares are as follows:

	Year Ended December 31,		
	2015	2014	2013
Ordinary shares outstanding:			
Beginning balance	486,969,402	548,824,138	575,216,709
Share-based compensation	4,972,908	1,411,837	931,125
Warrants exercised	1,989	1,116	7,666
Employee stock purchase plan	45,683	27,648	27,640
Purchase of ordinary shares	<u>(51,839,913)</u>	<u>(63,295,337)</u>	<u>(27,359,002)</u>
Ending balance	<u>440,150,069</u>	<u>486,969,402</u>	<u>548,824,138</u>

Treasury Shares—The changes in the amounts of treasury shares held by the Company are as follows:

	Year Ended December 31,		
	2015	2014	2013
Ordinary shares held as treasury shares:			
Beginning balance	91,463,729	29,607,877	3,206,033
Share-based compensation	(4,972,908)	(1,411,837)	(931,126)
Warrants exercised	150	—	1,608
Employee stock purchase plan	(45,683)	(27,648)	(27,640)
Purchase of ordinary shares	<u>51,839,913</u>	<u>63,295,337</u>	<u>27,359,002</u>
Ending balance	<u>138,285,201</u>	<u>91,463,729</u>	<u>29,607,877</u>

Accumulated Other Comprehensive Income (Loss)—The components of, and after-tax changes in, Accumulated other comprehensive income (loss) as of and for the years ended December 31, 2015 and 2014 are presented in the following table:

Millions of dollars	Financial Derivatives	Net Unrealized Holding Loss on Investments Net of Tax	Defined Pension and Other Postretirement Benefit Plans	Foreign Currency Translations Adjustments	Total
Balance—January 1, 2015	\$ (80)	\$—	\$(449)	\$(497)	\$(1,026)
Other comprehensive income (loss) before reclassifications	208	(5)	(6)	(429)	(232)
Amounts reclassified from accumulated other comprehensive loss	<u>(207)</u>	<u>—</u>	<u>27</u>	<u>—</u>	<u>(180)</u>
Net other comprehensive loss	<u>1</u>	<u>(5)</u>	<u>21</u>	<u>(429)</u>	<u>(412)</u>
Balance—December 31, 2015	<u>\$ (79)</u>	<u>\$ (5)</u>	<u>\$(428)</u>	<u>\$(926)</u>	<u>\$(1,438)</u>
Balance—January 1, 2014	\$ —	\$—	\$(140)	\$ 236	\$ 96
Other comprehensive income (loss) before reclassifications	9	—	(316)	(733)	(1,040)
Amounts reclassified from accumulated other comprehensive loss	<u>(89)</u>	<u>—</u>	<u>7</u>	<u>—</u>	<u>(82)</u>
Net other comprehensive income	<u>(80)</u>	<u>—</u>	<u>(309)</u>	<u>(733)</u>	<u>(1,122)</u>
Balance—December 31, 2014	<u>\$ (80)</u>	<u>\$—</u>	<u>\$(449)</u>	<u>\$(497)</u>	<u>\$(1,026)</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

The amounts reclassified out of each component of Accumulated other comprehensive income (loss) are as follows:

<u>Millions of dollars</u>	Year Ended December 31,			Affected Line Item on the Consolidated Statements of Income
	2015	2014	2013	
Reclassification adjustments for:				
Foreign currency translations	\$ —	\$—	\$ 4	Other income (expense), net
Defined pension and other postretirement benefit plan items:				
Amortization of:				
Prior service cost	5	—	14	
Actuarial loss	28	7	30	
Settlement gain	—	—	(3)	
Financial derivatives:				
Cross-currency swaps	(207)	(89)	—	Other income (expense), net
Reclassifications, before tax	(174)	(82)	45	
Income tax expense	6	—	10	Provision for income taxes
Amounts reclassified out of Accumulated other comprehensive income (loss)	<u>\$(180)</u>	<u>\$(82)</u>	<u>\$ 35</u>	

Amortization of prior service cost and actuarial loss as well as settlement gain are included in the computation of net periodic pension and other postretirement benefit costs (see Note 16).

Non-Controlling Interests—In June 2015, we received \$24 million from a holder of a minority interest in one of our consolidated partnerships to exit the partnership. Accordingly, our interest in this partnership increased resulting in an impact to equity of a \$4 million reduction of Non-controlling interests and a \$20 million increase in Additional paid-in capital.

21. Per Share Data

Basic earnings per share are based upon the weighted average number of shares of common stock outstanding during the periods. Diluted earnings per share includes the effect of certain stock options awards and other equity-based compensation awards. We have unvested restricted stock units that are considered participating securities for earnings per share.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Earnings per share data and dividends declared per share of common stock are as follows:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>					
	<u>2015</u>		<u>2014</u>		<u>2013</u>	
	<u>Continuing Operations</u>	<u>Discontinued Operations</u>	<u>Continuing Operations</u>	<u>Discontinued Operations</u>	<u>Continuing Operations</u>	<u>Discontinued Operations</u>
Net income (loss)	\$4,479	\$ (5)	\$4,172	\$ (4)	\$3,860	\$ (7)
Less: net loss attributable to non-controlling interests	<u>2</u>	<u>—</u>	<u>6</u>	<u>—</u>	<u>4</u>	<u>—</u>
Net income (loss) attributable to the Company shareholders	4,481	(5)	4,178	(4)	3,864	(7)
Net income attributable to participating securities	<u>(8)</u>	<u>—</u>	<u>(12)</u>	<u>—</u>	<u>(11)</u>	<u>—</u>
Net income (loss) attributable to ordinary shareholders—basic and diluted	<u>\$4,473</u>	<u>\$ (5)</u>	<u>\$4,166</u>	<u>\$ (4)</u>	<u>\$3,853</u>	<u>\$ (7)</u>
<u>Millions of shares, except per share amounts</u>						
Basic weighted average common stock outstanding	465	465	518	518	566	566
Effect of dilutive securities:						
Stock options	—	—	3	3	3	3
MTI, QPA and PSU awards	<u>1</u>	<u>1</u>	<u>—</u>	<u>—</u>	<u>1</u>	<u>1</u>
Potential dilutive shares	<u>466</u>	<u>466</u>	<u>521</u>	<u>521</u>	<u>570</u>	<u>570</u>
Earnings (loss) per share:						
Basic	<u>\$ 9.63</u>	<u>\$(0.01)</u>	<u>\$ 8.04</u>	<u>\$(0.01)</u>	<u>\$ 6.81</u>	<u>\$(0.01)</u>
Diluted	<u>\$ 9.60</u>	<u>\$(0.01)</u>	<u>\$ 8.00</u>	<u>\$(0.01)</u>	<u>\$ 6.76</u>	<u>\$(0.01)</u>
Participating securities	<u>0.4</u>	<u>0.4</u>	<u>1.4</u>	<u>1.4</u>	<u>1.7</u>	<u>1.7</u>
Dividends declared per share of common stock	<u>\$ 3.04</u>	<u>\$ —</u>	<u>\$ 2.70</u>	<u>\$ —</u>	<u>\$ 2.00</u>	<u>\$ —</u>

22. Segment and Related Information

Our operations are managed through five operating segments, as shown below. We disclose the results of each of our operating segments in accordance with ASC 280, *Segment Reporting*. Each of the operating segments is managed by a senior executive reporting directly to our Chief Executive Officer, the chief operating decision maker. Discrete financial information is available for each of the segments, and our Chief Executive Officer uses the operating results of each of the operating segments for performance evaluation and resource allocation. The activities of each of our segments from which they earn revenues and incur expenses are described below:

- Olefins and Polyolefins—Americas (“O&P—Americas”). Our O&P—Americas segment produces and markets olefins, including ethylene and ethylene co-products, and polyolefins.
- Olefins and Polyolefins—Europe, Asia, and International (“O&P—EAI”). Our O&P—EAI segment produces and markets olefins, including ethylene and ethylene co-products, polyolefins and specialty products, including polybutene-1 and polypropylene compounds.

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

- Intermediates and Derivatives (“I&D”). Our I&D segment produces and markets propylene oxide and its co-products and derivatives, acetyls, including methanol, ethylene oxide and its derivatives, ethanol and oxygenated fuels, or oxyfuels.
- Refining. Our Refining segment refines heavy, high-sulfur crude oils and other crude oils of varied types and sources available on the U.S. Gulf Coast.
- Technology. Our Technology segment develops and licenses chemical and polyolefin process technologies and manufactures and sells polyolefin catalysts.

Our chief operating decision maker uses EBITDA as the primary measure for reviewing our segments’ profitability and therefore, in accordance with ASC 280, *Segment Reporting*, we have presented EBITDA for all segments. We define EBITDA as earnings before interest, taxes and depreciation and amortization.

Intersegment eliminations and items that are not directly related or allocated to business operations are included in “Other.” Sales between segments are made primarily at prices approximating prevailing market prices.

Summarized financial information concerning reportable segments is shown in the following table for the periods presented:

<u>Millions of dollars</u>	<u>Year Ended December 31, 2015</u>						
	<u>O&P – Americas</u>	<u>O&P – EAI</u>	<u>I&D</u>	<u>Refining</u>	<u>Technology</u>	<u>Other</u>	<u>Total</u>
Sales and other operating revenues:							
Customers	\$7,344	\$11,371	\$7,596	\$6,059	\$365	\$ —	\$32,735
Intersegment	<u>2,620</u>	<u>205</u>	<u>176</u>	<u>498</u>	<u>100</u>	<u>(3,599)</u>	<u>—</u>
	9,964	11,576	7,772	6,557	465	(3,599)	32,735
Depreciation and amortization							
expense	353	219	233	196	46	—	1,047
Other income, net	10	14	4	2	—	(5)	25
Income from equity investments	42	283	14	—	—	—	339
Capital expenditures	668	186	441	108	24	13	1,440
EBITDA	3,661	1,825	1,475	342	243	(13)	7,533

<u>Millions of dollars</u>	<u>Year Ended December 31, 2014</u>						
	<u>O&P – Americas</u>	<u>O&P – EAI</u>	<u>I&D</u>	<u>Refining</u>	<u>Technology</u>	<u>Other</u>	<u>Total</u>
Sales and other operating revenues:							
Customers	\$ 9,608	\$14,861	\$ 9,985	\$10,768	\$385	\$ 1	\$45,608
Intersegment	<u>4,340</u>	<u>342</u>	<u>145</u>	<u>942</u>	<u>112</u>	<u>(5,881)</u>	<u>—</u>
	13,948	15,203	10,130	11,710	497	(5,880)	45,608
Depreciation and amortization							
expense	316	248	225	169	61	—	1,019
Other income, net	2	5	7	2	—	22	38
Income from equity investments	21	229	7	—	—	—	257
Capital expenditures	912	191	241	123	25	7	1,499
EBITDA	3,911	1,366	1,459	65	232	17	7,050

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

<u>Millions of dollars</u>	Year Ended December 31, 2013						<u>Total</u>
	<u>O&P – Americas</u>	<u>O&P – EAI</u>	<u>I&D</u>	<u>Refining</u>	<u>Technology</u>	<u>Other</u>	
Sales and other operating revenues:							
Customers	\$ 9,174	\$14,480	\$9,337	\$10,656	\$414	\$ 1	\$44,062
Intersegment	3,915	205	135	1,042	118	(5,415)	—
	13,089	14,685	9,472	11,698	532	(5,414)	44,062
Depreciation and amortization expense	293	287	204	160	75	2	1,021
Other income (expense), net	2	1	(16)	—	—	(2)	(15)
Income from equity investments	25	174	4	—	—	—	203
Capital expenditures	645	229	443	209	30	5	1,561
EBITDA	3,573	839	1,492	182	232	(7)	6,311

In 2015, operating results for the O&P—Americas, O&P—EAI, I&D and Refining segments include non-cash charges of \$160 million, \$30 million, \$181 million and \$177 million, respectively, related to lower of cost or market (“LCM”) inventory valuation adjustments. Declines in the prices of ethylene, propylene and other products correlated with crude oil were the primary drivers of the LCM inventory valuation adjustment for the O&P—Americas segment while the LCM inventory valuation adjustment recognized by our O&P—EAI segment is mainly related to polyolefins. Declines in the prices of various chemicals, notably benzene and ETBE, within our I&D segment’s inventory pools led to the LCM inventory valuation adjustment recognized by the I&D segment in 2015. The LCM inventory valuation adjustment recognized by the Refining segment in 2015 was driven primarily by declines in the price of crude oil.

In 2014, operating results for the O&P—Americas, O&P—EAI, I&D and Refining segments included non-cash charges of \$279 million, \$44 million, \$93 million and \$344 million, respectively, related to lower of cost or market inventory valuation adjustments, primarily driven by a decline in the price of crude oil and a related decline in the prices of heavy liquids and other correlated products. The O&P—EAI segment operating results for 2014 included a \$52 million benefit from a settlement under a 2005 indemnification agreement for certain existing and future environmental liabilities.

Our O&P—EAI segment operating results for 2013 included a \$25 million benefit from an insurance settlement related to the damage in 2012 to our LDPE plant in Wesseling, Germany described below. The Refining segment’s operating results for 2013 also included benefits of \$14 million for recoveries and a settlement associated with a former employee who pled guilty to fraud in 2010.

A reconciliation of EBITDA to Income from continuing operations before income taxes is shown in the following table for each of the periods presented:

<u>Millions of dollars</u>	Year Ended December 31,		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
EBITDA:			
Total segment EBITDA	\$ 7,546	\$ 7,033	\$ 6,318
Other EBITDA	(13)	17	(7)
Less:			
Depreciation and amortization expense	(1,047)	(1,019)	(1,021)
Interest expense	(310)	(352)	(309)
Add:			
Interest income	33	33	15
Income from continuing operations before income taxes	\$ 6,209	\$ 5,712	\$ 4,996

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

Long-lived assets of continuing operations, including goodwill, are summarized and reconciled to consolidated totals in the following table:

<u>Millions of dollars</u>	<u>O&P – Americas</u>	<u>O&P – EAI</u>	<u>I&D</u>	<u>Refining</u>	<u>Technology</u>	<u>Other</u>	<u>Total</u>
December 31, 2015							
Property, plant and equipment, net	\$3,660	\$1,881	\$2,250	\$ 993	\$207	\$—	\$8,991
Investment in PO joint ventures	—	—	397	—	—	—	397
Equity investments	141	1,372	95	—	—	—	1,608
Goodwill	162	144	222	—	8	—	536
December 31, 2014							
Property, plant and equipment, net	\$3,260	\$2,102	\$2,121	\$1,036	\$237	\$ 2	\$8,758
Investment in PO joint ventures	—	—	384	—	—	—	384
Equity investments	149	1,396	91	—	—	—	1,636
Goodwill	162	160	235	—	9	—	566

Property, plant and equipment, net, included in the “Other” column above includes assets related to corporate and support functions.

The following geographic data for revenues are based upon the delivery location of the product and for long-lived assets, the location of the assets:

<u>Millions of dollars</u>	<u>Year Ended December 31,</u>		
	<u>2015</u>	<u>2014</u>	<u>2013</u>
Sales and other operating revenues:			
United States	\$16,101	\$23,574	\$21,940
Germany	2,697	4,231	4,128
Italy	1,349	1,617	1,560
France	1,201	1,591	1,777
Mexico	951	1,361	1,478
The Netherlands	856	1,206	1,049
Other	9,580	12,028	12,130
Total	<u>\$32,735</u>	<u>\$45,608</u>	<u>\$44,062</u>

<u>Millions of dollars</u>	<u>Long-Lived Assets</u>	
	<u>2015</u>	<u>2014</u>
United States	\$ 7,087	\$ 6,657
Germany	1,331	1,513
The Netherlands	669	708
France	485	501
Italy	331	400
Mexico	153	161
Other	1,580	1,607
Total	<u>\$11,636</u>	<u>\$11,547</u>

Long-lived assets include Property, plant and equipment, net, Intangible assets, net, Equity investments, and Investments in PO joint ventures (see Notes 7, 8 and 9).

LYONDELLBASELL INDUSTRIES N.V.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS—(Continued)

23. Unaudited Quarterly Results

The following table presents selected financial data for the quarterly periods in 2015 and 2014:

<u>Millions of dollars</u>	<u>For the Quarter Ended</u>			
	<u>March 31</u>	<u>June 30</u>	<u>September 30</u>	<u>December 31</u>
2015				
Sales and other operating revenues	\$8,185	\$9,145	\$8,334	\$7,071
Gross profit ^(a)	1,806	2,098	1,869	1,279
Operating income ^(b)	1,575	1,845	1,650	1,052
Income from equity investments	69	90	93	87
Income from continuing operations ^(b)	1,167	1,326	1,189	797
Income (loss) from discontinued operations, net of tax	(3)	3	(3)	(2)
Net income ^(b)	1,164	1,329	1,186	795
Earnings per share:				
Basic	2.42	2.82	2.56	1.78
Diluted	2.41	2.82	2.54	1.78

<u>Millions of dollars</u>	<u>For the Quarter Ended</u>			
	<u>March 31</u>	<u>June 30</u>	<u>September 30</u>	<u>December 31</u>
2014				
Sales and other operating revenues	\$11,135	\$12,117	\$12,066	\$10,290
Gross profit ^(a)	1,558	1,862	1,948	1,301
Operating income ^(b)	1,340	1,613	1,706	1,077
Income from equity investments	61	68	64	64
Income from continuing operations ^(b)	943	1,173	1,260	796
Income (loss) from discontinued operations, net of tax	1	3	(3)	(5)
Net income ^(b)	944	1,176	1,257	791
Earnings per share:				
Basic	1.73	2.25	2.46	1.59
Diluted	1.72	2.23	2.45	1.54

(a) Represents Sales and other operating revenues less Cost of sales.

(b) Includes charges related to the pretax LCM inventory valuation adjustments of \$92 million (\$58 million after tax) in the three months ended March 31, 2015; \$181 million (\$114 million after tax) in the three months ended September 30, 2015; and \$284 million (\$185 million after tax) in the three months ended December 31, 2015. The three months ended June 30, 2015 includes a pretax benefit of \$9 million (\$6 million after tax) related to the partial reversal of the LCM inventory valuation adjustment recognized in the three months ended March 31, 2015. Includes lower of cost or market inventory valuation pretax adjustments of \$45 million (\$28 million after tax) and \$715 million (\$455 million after tax) in the three months ended September 30, 2014 and December 31, 2014, respectively. For additional information related to these adjustments, see Note 22.

24. Subsequent Events

On February 5, 2016, we received proceeds of \$184 million from the sale of our wholly owned subsidiary, Petroken Petroquímica Ensenada S.A.

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

None.

Item 9A. Controls and Procedures.

Effectiveness of Controls and Procedures

Our management, with the participation of our Chief Executive Officer (principal executive officer) and our Chief Financial Officer (principal financial officer) has evaluated the effectiveness of our disclosure controls and procedures in ensuring that the information required to be disclosed in reports that we file or submit under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, including ensuring that such information is accumulated and communicated to management (including the principal executive and financial officers) as appropriate to allow timely decisions regarding required disclosure. Based on such evaluation, our principal executive and financial officers have concluded that such disclosure controls and procedures were effective as of December 31, 2015, the end of the period covered by this Annual Report on Form 10-K.

Management's Report on Internal Control Over Financial Reporting

Management's report on our internal control over financial reporting can be found in Item 8, *Financial Statements and Supplementary Data*, of this report.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting, as defined in Rule 13a-15(f) of the Act, in our fourth fiscal quarter of 2015 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

We have a Code of Conduct for all employees and directors, including our principal executive officer, principal financial officer, principal accounting officer and persons performing similar functions. We also have a Financial Code of Ethics specifically for our principal executive officer, principal financial officer, principal accounting officer and persons performing similar functions. We have posted copies of these codes on the “Corporate Governance” section of our website at www.lyb.com (within the Investor Relations section). Any waivers of the codes must be approved, in advance, by our Supervisory Board. Any amendments to, or waivers from, the codes that apply to our executive officers and directors will be posted on the “Corporate Governance” section of our website.

Information regarding our executive officers is reported under the caption “Executive Officers of the Registrant” in Part I of this report, which is incorporated herein by reference.

All other information required by this Item will be included in our Proxy Statement relating to our 2016 Annual General Meeting of Shareholders and is incorporated herein by reference.*

Item 11. Executive Compensation.

All information required by this Item will be included in our Proxy Statement relating to our 2016 Annual General Meeting of Shareholders and is incorporated herein by reference.*

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

All information required by this Item will be included in our Proxy Statement relating to our 2016 Annual General Meeting of Shareholders and is incorporated herein by reference.*

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

All information required by this Item will be included in our Proxy Statement relating to our 2016 Annual General Meeting of Shareholders and is incorporated herein by reference.*

Item 14. Principal Accounting Fees and Services.

All information required by this Item will be included in our Proxy Statement relating to our 2016 Annual General Meeting of Shareholders and is incorporated herein by reference.*

** Except for information or data specifically incorporated herein by reference under Items 10 through 14, other information and data appearing in our 2016 Proxy Statement are not deemed to be a part of this Annual Report on Form 10-K or deemed to be filed with the Commission as a part of this report.*

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) (1) Consolidated Financial Statements:

The financial statements and supplementary information listed in the Index to Financial Statements, which appears on page 71, are filed as part of this annual report.

(a) (2) Consolidated Financial Statement Schedules:

Schedules are omitted because they either are not required or are not applicable or because equivalent information has been included in the financial statements, the notes thereto or elsewhere herein.

(b) Exhibits:

The exhibit list required by this Item is incorporated by reference to the Exhibit Index filed as part of this report.

SIGNATURES

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

LYONDELLBASELL INDUSTRIES N.V.

Date: February 16, 2016

/s/ BHAVESH V. PATEL
Name: **Bhavesh V. Patel**
Title: *Chairman of the Management Board*

<u>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ BHAVESH V. PATEL Bhavesh V. Patel	Chief Executive Officer and Chairman of the Management Board (Principal Executive Officer)	February 16, 2016
/s/ THOMAS AEBISCHER Thomas Aebischer	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 16, 2016
/s/ WILLIAM B. ALLEN, JR. William B. Allen, Jr.	Vice President, Finance (Principal Accounting Officer)	February 16, 2016
/s/ JACQUES AIGRAIN Jacques Aigrain	Director	February 16, 2016
/s/ LINCOLN BENET Lincoln Benet	Director	February 16, 2016
/s/ JAGJEET S. BINDRA Jagjeet S. Bindra	Director	February 16, 2016
/s/ ROBIN BUCHANAN Robin Buchanan	Director	February 16, 2016
Milton Carroll	Director	
/s/ STEPHEN F. COOPER Stephen F. Cooper	Director	February 16, 2016
/s/ NANCE K. DICCIANI Nance K. Dicciani	Director	February 16, 2016
/s/ CLAIRE S. FARLEY Claire S. Farley	Director	February 16, 2016
/s/ BELLA D. GOREN Bella D. Goren	Director	February 16, 2016

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ ROBERT G. GWIN</u> Robert G. Gwin	Chairman of the Supervisory Board and Director	February 16, 2016
<u>/s/ BRUCE A. SMITH</u> Bruce A. Smith	Director	February 16, 2016
<u>/s/ RUDY M.J. VAN DER MEER</u> Rudy M.J. van der Meer	Director	February 16, 2016

Exhibit Index

<u>Exhibit Number</u>	<u>Description</u>
3	Amended and Restated Articles of Association of LyondellBasell Industries N.V., dated as of May 22, 2013 (incorporated by reference to Exhibit 3 to Form 8-K filed with the SEC on May 29, 2013)
4.1*	Specimen certificate for Class A ordinary shares, par value €0.04 per share, of LyondellBasell Industries N.V.
4.2	Registration Rights Agreement by and among LyondellBasell Industries N.V. and the Holders (as defined therein), dated as of April 30, 2010 (incorporated by reference to Exhibit 4.7 to Amendment No. 2 to Form 10 filed with the SEC on July 26, 2010)
4.3	Amended and Restated Nomination Agreement dated March 10, 2015 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the SEC on March 16, 2015)
4.4	Indenture relating to 6.0% Senior Notes due 2021, among the Company, as issuer, each of the Guarantors named therein, as guarantors, Wells Fargo National Association, as trustee, registrar and paying agent, dated as of November 14, 2011 (including form of 6.0% Senior Note due 2021 (incorporated by reference to Exhibit 4.1 to Form 8-K filed with the SEC on November 17, 2011)
4.5	First Supplemental Indenture, dated as of December 10, 2015, to Indenture dated as of November 14, 2011, between the Company and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.2 to our Current Report on Form 8-K filed with the SEC on December 12, 2015).
4.6	Indenture relating to 5% Senior Notes due 2019 and 5.75% Senior Notes due 2024, among LyondellBasell Industries N.V., as issuer, each of the Guarantors named therein, as guarantors, Wells Fargo Bank, National Association, as trustee, registrar and paying agent, dated as of April 9, 2012 (including form of 5.000% Senior Note due 2019 and form of 5.750% Senior Note due 2024) (incorporated by reference to Exhibit 4.3 to Form 8-K filed with the SEC on April 10, 2012)
4.7	First Supplemental Indenture, dated as of December 10, 2015, to Indenture dated as of April 9, 2012, between the Company and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed with the SEC on December 12, 2015).
4.8	Indenture, among LYB International Finance B.V., as issuer, LyondellBasell Industries N.V., as guarantor, and Wells Fargo Bank, National Association, as trustee, dated as of July 16, 2013 (incorporated by reference to Exhibit 4.1 to Form 8-K filed with the SEC on July 16, 2013)
10.1+	Employment Agreement by and amount Bhavesh V. Patel, Lyondell Chemical Company and LyondellBasell Industries, N.V., dated as of December 18, 2014 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the SEC on December 22, 2014)
10.2+	Employment Agreement dated November 6, 2015, between Basell Service Company, B.V. and Thomas Aebischer (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the SEC on November 9, 2015).
10.3+	Letter Agreement dated November 6, 2015 between Thomas Aebischer and Lyondell Chemical Company (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed with the SEC on November 9, 2015).
10.4+	Employment Agreement by and among Kevin Brown, Lyondell Chemical Company and LyondellBasell AFGP, dated as of March 19, 2010 (incorporated by reference to Exhibit 10.4 to our Form 10 filed with the SEC on April 28, 2010)

<u>Exhibit Number</u>	<u>Description</u>
10.5+	First Amendment to Employment Agreement by and among Kevin Brown, Lyondell Chemical Company and LyondellBasell Industries N.V., dated as of January 22, 2015 (incorporated by reference to Exhibit 10.8 to our Annual Report on Form 10-K filed with the SEC on February 17, 2015)
10.6+	LyondellBasell Industries Amended and Restated 2010 Long-Term Incentive Plan (incorporated by reference to Appendix A to our definitive proxy statement filed with the SEC on March 29, 2012)
10.7+	LyondellBasell U.S. Senior Management Deferral Plan dated March 1, 2012 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the SEC on March 1, 2012)
10.8+	First Amendment to the LyondellBasell U.S. Senior Management Deferral Plan filed with the SEC on April 29, 2013 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the SEC on April 30, 2013)
10.9+	LyondellBasell Executive Severance Plan, Amended & Restated, Effective as of June 1, 2015 and Form of Participation Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the SEC June 5, 2015)
10.10+	Form of Officer and Director Indemnification Agreement (incorporated by reference to Exhibit 10.14 to Amendment No. 2 to our Form 10 filed with the SEC on July 26, 2010)
10.11+	Form of Non-Qualified Stock Option Award Agreement (incorporated by reference to Exhibit 10.12 to our Annual Report on Form 10-K filed with the SEC on February 12, 2013)
10.12+	Form of Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.13 to our Annual Report on Form 10-K filed with the SEC on February 12, 2013)
10.14+	Form of Qualified Performance Award Agreement (incorporated by reference to our Annual Report on Form 10-K filed with the SEC on February 29, 2012)
10.15+*	Form of Performance Share Unit Award Agreement.
10.16	Amended and Restated Credit Agreement, filed with the SEC on June 5, 2014, among LyondellBasell Industries N.V. and LYB Americas Finance Company, as Borrowers, the Lenders, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Deutsche Bank Securities Inc., as Syndication Agent and the other parties thereto (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the SEC on June 5, 2014)
10.17	Receivables Purchase Agreement, dated September 11, 2012, by and among Lyondell Chemical Company, as initial servicer, and LYB Receivables LLC, a bankruptcy-remote special purpose entity that is a wholly owned subsidiary of the Company, PNC National Association, as Administrator and LC Bank, certain conduit purchasers, committed purchasers, LC participants and purchaser agents that are parties thereto from time to time (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the SEC on September 14, 2012)
10.18	Second Amendment to Receivables Purchase Agreement, dated as of August 26, 2015, among Lyondell Chemical Company, as servicer, LYB Receivables LLC, as seller, the conduit purchasers, related committed purchasers, LC participants and purchaser agents party thereto, the other parties thereto and Mizuho Bank, Ltd., as Administrator and LC Bank (incorporated by reference to Exhibit 10 to our Current Report on Form 8-K filed with the SEC on August 28, 2015)
10.19	Purchase and Sale Agreement, dated September 11, 2012, by and among Lyondell Chemical Company, Equistar Chemicals, LP and LyondellBasell Acetyls, LLC, the other originators from time to time parties thereto, Lyondell Chemical Company, as initial servicer and LYB Receivables LLC, a bankruptcy-remote special purpose entity that is a wholly owned subsidiary of the Company (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed with the SEC on September 14, 2012)

<u>Exhibit Number</u>	<u>Description</u>
10.20	Master Receivables Purchase Agreement (as amended and restated on April 23,2013) among Basell Sales and Marketing Company B.V., Lyondell Chemie Nederland B.V., Basell Polyolefins Collections Limited, Citicorp Trustee Company Limited and Citibank, N.A., London Branch (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed with the SEC on April 29, 2013)
10.21	Consent Agreement, dated June 5, 2015, among LyondellBasell Industries N.V. and LYB Americas Finance Company, as Borrowers, Bank of America, N.A., as Administrative Agent and the lender parties thereto (incorporated by reference to Exhibit 10 to our Current Report on Form 8-K filed with the SEC on June 9, 2015)
12.1*	Computation of Ratio of Earnings to Fixed Charges
21*	List of subsidiaries of the registrant
23*	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm
31.1*	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934
31.2*	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934
32*	Certifications pursuant to 18 U.S.C. Section 1350
101.INS*	XBRL Instance Document
101.SCH*	XBRL Schema Document
101.CAL*	XBRL Calculation Linkbase Document
101.DEF*	XBRL Definition Linkbase Document
101.LAB*	XBRL Labels Linkbase Document
101.PRE*	XBRL Presentation Linkbase Document
+	Management contract or compensatory plan, contract or arrangement
*	Filed herewith.