LyondellBasell Industries N.V.

Financial Report

For the Year Ended 31 December 2018

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About LyondellBasell

LyondellBasell Industries N.V. is a global, independent chemical company and was incorporated under Dutch law on 15 October 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 refined products such as gasoline, diesel and jet fuel.

Our financial performance is influenced by the supply and demand for our products, the cost and availability of feedstocks, global and regional production 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. We purchase large quantities of natural gas, electricity and steam which we use as energy to fuel our facilities. We also purchase large quantities of natural gas and crude oil derivatives which we use as feedstocks. During recent years the relatively low 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 new facilities and increased supply has reduced the North American feedstock advantage, improved product supply and demand fundamentals in several businesses, notably global polyolefins products, have partially offset the decline.

We and our subsidiaries employed approximately 19,450 full-time and part-time employees at 31 December 2018. In addition to our own employees, we also use the services of contractors in the routine conduct of our businesses.

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

- **Olefins and Polyolefins-Americas ("O&P-Americas").** Our O&P-Americas segment produces and markets olefins and co-products, polyethylene and polypropylene.
- **Olefins and Polyolefins-Europe, Asia, International ("O&P-EAI").** Our O&P-EAI segment produces and markets olefins and co-products, polyethylene and polypropylene.
- **Intermediates and Derivatives ("I&D").** Our I&D segment produces and markets propylene oxide and its derivatives, oxyfuels and related products, and intermediate chemicals; such as, styrene monomer, acetyls, ethylene oxide and ethylene glycol.
- **Advanced Polymer Solutions ("APS").** Our APS segment produces and markets compounding and solutions, such as polypropylene compounds, engineered plastics, masterbatches, engineered composites, colors and powders, and advanced polymers, which includes *Catalloy* and polybutene-1.
- **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.
- **Technology.** Our Technology segment develops and licenses chemical and polyolefin process technologies and manufactures and sells polyolefin catalysts.

2. Report of the Board of Directors

2.1 Operational and Financial Overview

This discussion should be read in conjunction with the information contained in our Consolidated Financial Statements, and the accompanying notes elsewhere in this report.

References to industry benchmarks for refining margins are to industry prices reported by The McGraw-Hill Companies.

Highlights for the period ended 31 December 2018:

- Completion of the $1.9 billion acquisition of A. Schulman Inc. ("A. Schulman"), a leading global supplier of high-performance plastic compounds, composites and powders, on 21 August 2018;
- Groundbreaking for our new $2.4 billion PO/TBA plant at our Channelview, Texas facility on 22 August 2018;
- Construction of our *Hyperzone* high density polyethylene plant on track for planned start-up in the third quarter of 2019;
- Non-cash income tax benefit of $404 million related to an audit settlement associated with specific uncertain tax positions recognized in the second quarter of 2018;

- Acquisition of a 50% interest in Quality Circular Polymers, a high standard plastics recycling company in Sittard-Geleen, Netherlands on 14 March 2018; and
- Increase in quarterly dividend from $0.90 to $1.00 in February 2018.

The following selected financial data of the Company should be read in conjunction with the Consolidated Financial Statements and related notes thereto and Management's discussion and analysis of our results of operations below. The selected financial data of the Company is derived from its audited Consolidated Financial Statements.

	Year Ended 31 December	
Millions of U.S. Dollars (except for earnings per share amounts)	2018	2017
Results of Operations Data		
Revenue	$ 39,133	$ 34,592
Operating profit	5,420	5,862
Finance costs	436	363
Depreciation, amortization and impairments	1,285	1,226
Profit for the year	4,652	5,062
Earnings per share:		
Basic	11.95	12.70
Diluted	11.92	12.70
Balance Sheet Data		
Total equity	9,880	8,556
Borrowings	9,563	8,707
Cash and cash equivalents	(415)	(1,579)
Net debt	9,148	7,128
Trade and other receivables	4,602	4,614
Inventories	4,468	4,215
Trade and other payables	(4,442)	(4,145)
Net working capital	4,628	4,684
Cash Flow Data		
Net cash provided by (used in):		
Operating activities	5,328	4,977
Investing activities	(3,541)	(1,544)
Including purchase of property, plant and equipment	(2,316)	(1,547)
Financing activities	(2,920)	(2,859)

During 2018, we continued to deliver strong earnings despite market challenges in the second half of the year and planned and unplanned downtime that negatively impacted fourth quarter 2018 results by approximately $225 million. Noteworthy annual results for our I&D segment driven by market improvements and targeted contracting strategies and in our Technology segment due to an increased number of polyolefin technology licenses were partially offset by declines in our O&P–Americas and O&P–EAI results. With our acquisition of A. Schulman in August 2018, we captured opportunity to expand into new markets and created an additional platform for growth. We continued to manage our business portfolio by, among other things, investing in a recycling joint venture, and divesting our carbon black subsidiary in France.

As oil prices fell by 40% during the fourth quarter 2018, our O&P–EAI segment experienced declining demand as customers delayed orders and destocked inventories in expectations of lower pricing. This destocking and associated pricing pressures compounded the effects of typical fourth quarter seasonality. Our O&P–EAI segment was also impacted by low water levels on the Rhine River, extended maintenance at our Wesseling, Germany cracker and feedstock supply constraints at our Münchsmünster, Germany cracker during the fourth quarter. Our APS segment volumes were affected by decreased automotive demand in recent quarters and our Refining segment's fourth quarter margins were negatively impacted by high gasoline inventories and unusually weak discounts for Maya crude oil.

Significant items that affected EBITDA in 2018 relative to 2017 include:

- Lower O&P-Americas segment results with lower ethylene margins and higher fixed costs, offset by higher polyolefins margins;
- Lower O&P-EAI segment results with lower margins and volumes in Europe, partly offset by favorable foreign exchange impacts;
- Higher I&D segment results with increased margins and volumes;
- Lower APS segment results as lower margins and the impact of acquisition-related transaction and integration costs were partly offset by the contribution of results from A. Schulman product lines following the 21 August 2018 acquisition;
- Higher Refining segment results with higher refining margins and better yields; and
- Higher Technology segment results due mostly to increased licensing revenue.

Revenues—We had revenues of $39,133 million in 2018 and $34,592 million in 2017.

Higher average sales prices led to a revenue increase of 11% in 2018. Average sales prices in 2018 were higher for most of our products as sales prices generally correlate with crude oil prices, which increased relative to 2017, despite a 40% decrease in oil prices during the fourth quarter 2018. A revenue decrease of 1% in 2018 reflects lower sales volumes for our O&P–Americas, O&P–EAI and APS segments, which were partly offset by an improvement in Refining and I&D segment sales volumes. Favorable foreign exchange impacts in 2018 resulted in a revenue increase of 1% relative to the prior year period. The operations of A. Schulman contributed $846 million of revenues following the acquisition which accounts for the remaining improvement in revenues for 2018.

Cost of Sales—Cost of sales were $32,707 million in 2018 and $27,820 million in 2017.

Fluctuations in our cost of sales are generally driven by changes in feedstock and energy costs, as all other material components remain relatively flat from year to year. Feedstock and energy related costs generally represent approximately 75% to 80% of cost of sales, other variable costs account for approximately 10% of cost of sales on an annual basis and fixed operating costs, consisting primarily of expenses associated with employee compensation, depreciation and amortization, and maintenance, range from approximately 10% to 15% in each annual period. Cost of sales increased by $4,887 million, or 18%, in 2018 compared to 2017. This increase in cost of sales is primarily due to increases in feedstock and energy costs. Costs for crude oil, heavy liquid feedstocks and natural gas liquids ("NGLs") and other feedstocks were higher in 2018 relative to 2017.

Operating Profit—Our operating profit was $5,420 million and $5,862 million in 2018 and 2017, respectively. Operating profit for our O&P–EAI, O&P–Americas, APS and Refining segments declined $752 million, $118 million, $123 million and $165 million, respectively, over 2017. These declines were partly offset by increases in operating profit of $389 million and $83 million in our I&D and Technology segments, respectively.

Finance Costs—Finance costs were $436 million in 2018 and $363 million in 2017. The $73 million increase in Finance Costs was primarily due to higher foreign exchange losses on intercompany loans amounting $230 million resulting from stronger US dollar to Euro partially offset by $158 million lower interest expense on borrowings as explained below.

In 2017, we recognized charges totaling $113 million related to the March 2017 redemption of $1,000 million of our outstanding 5% senior notes due 2019. These charges included $65 million of prepayment premiums, $44 million for adjustments associated with fair value hedges and $4 million for the write-off of associated unamortized debt issuance costs. Higher capitalized interest accounted for $25 million of lower interest expense relative to 2017.

Share of Profit of Investments Accounted for Using the Equity Method—The Company had profit from investments accounted for using the equity method totaling $194 million in 2018 and $217 million in 2017. Profit from our equity investments decreased in 2018 largely as a result of reduced polyolefin spreads.

Income Taxes—In 2017, the U.S. enacted "H.R.1," also known as the "Tax Cuts and Jobs Act" (the "Tax Act"), materially impacting our Consolidated Financial Statements by, among other things, the decreasing tax rate and significantly affecting future periods. To determine the full effects of the tax law for 2018, we are awaiting the finalization of several proposed U.S. Treasury regulations under the Tax Act that were issued during 2018, as well as additional regulations to be proposed and finalized pursuant to the Treasury's expanded regulatory authority under the Tax Act. It is also possible that technical correction legislation concerning the Tax Act could retroactively affect tax liabilities for 2018. The Tax Act reduced the federal corporate tax rate from 35% to 21% for years beginning after 2017, which resulted in the remeasurement of our U.S. net deferred income tax liabilities. As a result, we recognized a tax benefit of $849 million in 2017. Including subsequent adjustments made in 2018, the cumulative impact of the remeasurement of our U.S. net deferred income tax liabilities and tax accruals was an $844 million income tax benefit.

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 that applied to periods prior to 2018, changes in foreign exchange gains/losses, the amount of exempt income, and changes in unrecognized tax benefits associated with uncertain tax positions. Our exempt income primarily includes interest income, export incentives, and equity earnings of our joint ventures. Interest income earned by certain of our European subsidiaries through intercompany financings is either untaxed or taxed at rates substantially lower than the U.S. statutory rate. Tax regulations proposed in 2018 may affect tax deductible interest in the U.S. in future periods, however, we do not believe they will have a material impact as proposed. Export incentives relate to tax benefits derived from elections and structures available for U.S. exports. Equity earnings attributable to the earnings of our joint ventures, when paid through dividends to certain European subsidiaries are exempt from all or portions of normal statutory income tax rates. We currently anticipate the favorable treatment for interest income, dividends and export incentives to continue in the near term, however, this treatment is based on current law and tax rulings, which could change, including changes with respect to proposed Treasury regulations under the Tax Act if finalized. 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.

In 2016 the U.S. Treasury issued final Section 385 debt-equity regulations that impact our internal financings beginning in 2017. Pursuant to a 2017 Executive Order, the Treasury Department reviewed these regulations and determined that they should be retained, subject to further review following the enactment of U.S. tax reform. We are awaiting the U.S. Treasury's review of the existing Section 385 debt-equity regulations which could impact our internal financings in future years as well as any final regulations impacting interest deductions under the Tax Act.

The weighted average applicable tax rates for 2018 and 2017 were 24.4% and 32.2%, respectively. The decrease was primarily attributable to the change in U.S. federal income tax rate as a result of the Tax Act. Our effective income tax rate of 10.9% in 2018 and 11.8% in 2017 resulted in income tax expense of $571 million and $678 million, respectively. Compared to 2017, the 2018 effective income tax rate decreased primarily due to the change in U.S. federal income tax rate and the impact of an audit settlement related to specific uncertain tax positions which resulted in a $404 million non-cash benefit to our effective tax rate, partially offset by the remeasurement of U.S. net deferred tax liability which occurred in 2017.

2.1.1 Segment Analysis

Following our acquisition of A. Schulman, our continuing operations are managed through six reportable segments: O&P-Americas, O&P-EAI, I&D, APS, Refining and Technology. Each of the operating segments is managed by a senior executive reporting directly to our Chief Executive Officer ("CEO"), the chief operating decision maker. Discrete financial information is available for each of the segments, and our CEO uses the operating results of each of the operating segments for performance evaluation and resource allocation.

Our new APS segment produces and markets compounding and solutions, such as polypropylene compounds, engineered plastics, masterbatches, engineered composites, colors and powders; and advanced polymers, which includes Catalloy and polybutene-1. Polypropylene compounds, Catalloy and polybutene-1 were previously reported in our O&P-EAI and O&P-Americas segments. Accordingly, the historical results of our O&P-EAI and O&P-Americas segments have been recast for all comparable periods presented. For additional information related to our segments, see Note 3, *Business Combinations* and Note 33, *Segment and Related Information* to the Consolidated Financial Statements.

Accounting policies for internal reporting, which are based on accounting principles generally accepted in the United States of America ("U.S. GAAP"), are materially similar to those described in Summary of Significant Accounting Policies (see Note 2 of the Consolidated Financial Statements), except for:

- *Inventories*—The Company measures its inventories in accordance with the Last In, First Out ("LIFO") method, which is permitted under U.S. GAAP. According to International Accounting Standards ("IAS") 2, *Inventories,* the LIFO method is prohibited under IFRS. Therefore, inventories are measured using the First In, First Out ("FIFO") method for the Consolidated Financial Statements. This inventory measurement difference between the reportable segments and the consolidated information results in different cost of sales and net profit for the period.
- *Employee Benefits*—Under U.S. GAAP, ASC Topic 715, Compensation — Retirement Benefits ("ASC 715") requires the interest expense component of pension expense to be calculated as the product of the defined benefit liability and the discount rate. Such interest expense is netted against interest income resulting from the expected rate of return on plan assets applied to 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 discount rate, reflecting long-term market expectations, rather than current fluctuations in market conditions. Under IFRS, in accordance with IAS 19, *Employee Benefits*, the Company recognizes a net interest expense (income), which is the product of the net defined benefit liability (asset) and the discount rates, as a component of its pension expense on defined benefit plans. Under ASC 715, past service cost and actual return on plan assets in excess of expected return are initially recorded in other comprehensive income and subsequently recognized in earnings over the average remaining service period of the participants to the extent it exceeds the "corridor." The corridor is defined as the

greater of 10 percent of the accumulated projected benefit obligation or the fair value of the plan assets as of the beginning of the year. Under IFRS, the Company immediately recognizes past service cost and net interest expense (income) as discussed above in the Consolidated Statement of Income. Actual return of plan assets in excess of recognized interest income is permanently recorded in other comprehensive income.

- *Other*—Amongst others, there are minor differences between IFRS and U.S. GAAP with respect to IFRS 11, *Joint Arrangements* as well as discontinued operations, the subsequent measurement of asset retirement obligations, cross-currency swaps, capitalization of development costs related to research and development and amortization of debt issuance costs. If material, these differences are separately disclosed in the Consolidated Financial Statements reconciliation.

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 U.S. GAAP measure and to the IFRS Operating profit, see Note 33 of the Consolidated Financial Statements.

The following tables reflect selected financial information for our reportable segments.

	Year Ended 31 December	
Millions of U.S. Dollars	2018	2017
Sales and other operating revenues:		
O&P-Americas segment	$ 10,408	$ 10,004
O&P-EAI segment	10,838	10,218
I&D segment	9,588	8,472
APS segment	4,024	2,922
Refining segment	9,157	6,848
Technology segment	583	450
Other, including intersegment eliminations	(5,594)	(4,430)
Total	$ 39,004	$ 34,484
Share of profit of associates and joint ventures:		
O&P-Americas segment	$ 58	$ 42
O&P-EAI segment	225	271
I&D segment	6	8
Total	$ 289	$ 321
EBITDA:		
O&P-Americas segment	$ 2,762	$ 2,899
O&P-EAI segment	1,163	1,927
I&D segment	2,011	1,490
APS segment	400	438
Refining segment	167	157
Technology segment	328	223
Other, including intersegment eliminations	36	—
Total	$ 6,867	$ 7,134

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 olefins and polyolefins and as such, ethylene sales volumes and prices and our internal cost of ethylene production are included in management's assessment of the segment's performance.

EBITDA declined in 2018 as lower ethylene margins more than offset the improvement in polyolefins margins relative to 2017. EBITDA for 2017 also included a $31 million gain resulting from the sale of property in Lake Charles, Louisiana.

Ethylene Raw Materials—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. We have significant flexibility to vary the raw material mix and process conditions in our U.S. olefins plants in order to maximize profitability as market prices for both feedstocks and products change.

As in recent years, strong supplies from the U.S. shale gas/oil boom resulted in ethane being a preferred feedstock in our U.S. plants in 2018. Ethane remained the preferred U.S. feedstock for ethylene despite higher recent prices driven by increased demand from newly-constructed U.S. olefins units and supply constraints in the Gulf Coast NGL fractionation and pipeline systems. In 2018, we produced approximately 80% of our ethylene from ethane compared to approximately 75% in 2017. Despite generally higher liquid feedstock prices, strong propylene and butadiene coproduct prices at various points in the year also brought liquids into our feedslate.

The following table sets forth selected financial information for the O&P-Americas segment including Share of profit of associates and joint ventures, which is a component of EBITDA.

	Year Ended 31 December	
Millions of U.S. Dollars	**2018**	**2017**
Sales and other operating revenues	$ 10,408	$ 10,004
Share of profit of associates and joint ventures	58	42
EBITDA	2,762	2,899

Revenues—Revenues increased by $404 million in 2018 compared to 2017.

Average polyethylene and polypropylene sales prices, supported globally by higher crude oil prices, increased relative to 2017. This favorable impact was partly offset by a 6 cents decline in ethylene prices resulting from increased supply driven by the start-up of new U.S. ethylene capacity. The overall average increase in sales prices was responsible for a 8% increase in 2018 revenues.

Segment volumes declined in 2018 mainly due to lower sales of purchased feedstock and the negative impact of planned and unplanned maintenance on polypropylene and polyethylene sales. These lower sales volumes were responsible for a revenue decrease of 4% in 2018.

EBITDA—EBITDA decreased by $137 million in 2018 compared to 2017.

Lower olefins margins and higher fixed costs, which were partly offset by higher polyethylene and polypropylene margins, led to a 3% decline in 2018 EBITDA. Ethylene margins decreased by 5 cents per pound largely due to the decline in ethylene sales prices discussed above. Polyethylene and polypropylene margins reflect per pound increases in price spreads over ethylene and propylene of 7 cents and 3 cents, respectively, driven by higher sales prices and in the case of polyethylene, also by the lower cost of ethylene feedstock. The increase in polyethylene and polypropylene margins stem from strong demand and industry supply constraints. Lower polyethylene and polypropylene volumes also resulted in a 2% decline in 2018 EBITDA. An additional 1% decrease in EBITDA relative to 2017 was related to the gain on the sale of property in Lake Charles, Louisiana.

The remaining change in 2018 EBITDA was attributed to an increase in income from our equity investments.

Olefins and Polyolefins-Europe, Asia, International 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 and as such, ethylene sales volumes and prices and our internal cost of ethylene production are included in management's assessment of the segment's performance.

EBITDA in 2018 declined largely as a result of lower margins and volumes in Europe compared to a strong 2017. EBITDA for 2018 includes a $36 million gain from the fourth quarter 2018 sale of our carbon black subsidiary in France. In 2017, EBITDA included a $108 million gain on the third quarter 2017 sale of our 27% interest in Geosel and the $21 million beneficial impact related to the elimination of an obligation associated with a lease.

Ethylene Raw Materials—In Europe, heavy liquids are the primary raw materials for our ethylene production. In 2018 and 2017, we continued to benefit by sourcing advantaged NGLs as market opportunities arose.

The following table sets forth selected financial information for the O&P-EAI segment including Share of profit of associates and joint ventures, which is a component of EBITDA.

	Year Ended 31 December	
Millions of U.S. Dollars	**2018**	**2017**
Sales and other operating revenues	$ 10,838	$ 10,218
Share of profit of associates and joint ventures	225	271
EBITDA	1,163	1,927

Revenues—Revenues in 2018 increased by $620 million compared to 2017.

Average sales prices in 2018 were higher across most products as sales prices generally correlate with crude oil prices, which were significantly higher compared to 2017. These higher average sales prices were responsible for a revenue increase of 7% in 2018. Planned and unplanned maintenance, a weaker market and low Rhine River levels in the second half of 2018, compared to the prior year, led to lower sales volumes across most products. These decreased volumes resulted in a revenue decrease of 4% in 2018. Foreign exchange impacts in 2018, which were favorable on average compared to 2017, led to a revenue increase of 3%.

EBITDA—EBITDA decreased by $764 million in 2018 compared to 2017.

Olefins and polyolefins margins in Europe declined in 2018. Olefins margins decreased as the improvement in ethylene prices lagged a 10 cents per pound increase in the weighted average cost of ethylene production due to higher prices for naphtha and other olefin feedstocks. A decline in 2018 polyethylene margins reflected lower per pound decrease in price spreads over ethylene and propylene of 3 cents and 2 cents, respectively. These lower margins were due to weaker supply/demand balances in Europe and led to a decline in EBITDA of 29%, in comparison to a strong 2017. The impact of the lower volumes discussed above also led to a 9% decrease in 2018 EBITDA. A reduction in income from our equity investments resulted in an additional 2% decrease in EBITDA relative to 2017. The net impact of the 2018 gain on the sale of our carbon black subsidiary in France and the 2017 benefits related to the sale of our interest in Geosel and the elimination of an obligation associated with a lease discussed above resulted in a further 5% decline in EBITDA.

These unfavorable impacts were offset in part by a 5% increase to EBITDA due to favorable foreign exchange impacts in 2018.

Intermediates and Derivatives Segment

Overview—EBITDA for our I&D segment was higher across all businesses in 2018 compared to 2017, which included an approximate $50 million unfavorable impact related to precious metal catalysts.

EBITDA improved in 2018 relative to 2017 as higher margins across most products benefited from industry supply constraints and strong demand.

The following table sets forth selected financial information for the I&D segment including Share of profit of associates and joint ventures, which is a component of EBITDA.

	Year Ended 31 December	
Millions of U.S. Dollars	**2018**	**2017**
Sales and other operating revenues	$ 9,588	$ 8,472
Share of profit of associates and joint ventures	6	8
EBITDA	2,011	1,490

Revenues—Revenues for 2018 increased by $1,116 million compared to 2017.

Higher average sales prices in 2018 for most products, which reflect the impacts of higher feedstock and energy costs and industry supply constraints, were responsible for a revenue increase of 10%. Higher sales volumes resulted in a revenue increase of 2% in 2018, primarily due to hurricane Harvey impacts and major turnarounds at our Botlek, Netherlands and Channelview, Texas facilities in 2017. Foreign exchange impacts that, on average, were favorably higher relative to 2017 resulted in a revenue increase of 1%.

EBITDA—EBITDA increased by $521 million in 2018 compared to 2017.

Higher margins were responsible for an improvement in EBITDA of 27% in 2018 relative to 2017. Industry outages and other supply constraints for several intermediate chemicals products, along with strong demand for PO and derivatives products, led to tight supplies and higher sales prices. Intermediate chemicals products accounted for approximately two thirds of the margin improvement in 2018 as most intermediate chemical products benefited from lower ethylene raw material costs and tight industry supply. PO and derivatives and oxyfuels and related products each accounted for approximately half of the remaining increase in margins in 2018. Margins for oxyfuels and related products improved with higher crude oil pricing which outpaced butane.

The impact of higher volumes as discussed above added 3% to EBITDA in 2018 while favorable foreign exchange impacts added 2%. An additional 3% increase in EBITDA in 2018, as compared to the prior year period, stems from the absence of unfavorable impact associated with precious metal catalysts in 2017.

Advanced Polymer Solutions Segment

Overview—EBITDA for our APS segment declined relative to 2017 as lower margins and $69 million of acquisition—related transaction and integration costs were offset by $58 million of EBITDA stemming from the acquisition of A. Schulman.

The following table sets forth selected financial information for the APS segment including Share of profit of associates and joint ventures, which is a component of EBITDA.

	Year Ended 31 December	
Millions of U.S. Dollars	**2018**	**2017**
Sales and other operating revenues	$ 4,024	$ 2,922
EBITDA	400	438

Revenues—Revenues for 2018 increased by $1,102 million compared to 2017.

The acquisition of A. Schulman contributed $846 million to revenues of the APS segment, which accounts for a revenue increase in 2018 of approximately 29% relative to 2017. Higher average sales prices, which were driven by the increased cost of raw materials, also led to a revenue increase of 8% in 2018. Foreign exchange impacts, which on average, were favorable in 2018 also resulted in a revenue increase of 2%.

A decline in compounding and solutions product volumes in 2018 stemming from lower automotive production in Europe was substantially offset by higher advanced polymers product volumes due to strong demand in Europe and North America leading to a 1% decline in revenues.

EBITDA—EBITDA decreased by $38 million in 2018 compared to 2017.

EBITDA declined by 16% in 2018 as a result of the $69 million of costs associated with the acquisition and integration of A. Schulman. The operations of A. Schulman following the acquisition contributed $58 million of EBITDA to the results of the APS segment leading to an increase in EBITDA of 13%.

Margins for compounding and solutions products declined in 2018 due primarily to increases in raw material costs in South America and Asia that outpaced increases in average sales prices. These lower margins and the decline in volumes discussed above resulted in decreases of 8% and 1%, respectively, in EBITDA.

Favorable foreign exchange impacts partly offset these declines with a 3% increase in 2018 EBITDA.

Refining Segment

Overview—EBITDA for our Refining segment benefited in 2018 from improved refining margins primarily driven by favorable crude oil discounts in Western Canadian Select and improved rates on our fluid catalytic converter leading to better yields.

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.

	Year Ended 31 December	
Millions of U.S. Dollars	2018	2017
Sales and other operating revenues	$ 9,157	$ 6,848
EBITDA	167	157
Heavy crude processing rates (thousands of barrels per day)	231	236
Market margins, dollars per barrel		
Light crude oil-2-1-1	$ 12.35	$ 13.54
Light crude oil-Maya differential	7.50	7.02
Total Maya 2-1-1	$ 19.85	$ 20.56

Revenues—Revenues increased by $2,309 million in 2018 compared to 2017.

Higher product prices led to a revenue increase of 26% relative to 2017 due to a per barrel increase in average crude oil prices of approximately $16 in 2018. Heavy crude oil processing rates in 2018 decreased 2% relative to 2017, with both comparative periods impacted by turnaround activity. Sales volumes increased in 2018 leading to a revenue increase of 8%, compared to the 2017 period due to an increase in downstream processing of intermediate oils.

EBITDA—EBITDA increased by $10 million in 2018 compared to 2017.

Advantaged pricing for Canadian crude oil and better yields equally contributed to the improvement in 2018 refining margins relative to 2017, which was negatively impacted by planned turnaround activity on our fluid catalytic cracking unit. These higher margins accounted for a 12% improvement in 2018 EBITDA. These margin improvements were offset by a 2% decrease in heavy crude oil processing rates which resulted in a volume-driven 6% decrease in EBITDA.

Technology Segment

Overview—The Technology segment recognizes revenues related to the sale of polyolefin catalysts and the licensing of chemical and polyolefin process technologies. These revenues are offset in part by the costs incurred in the production of catalysts, licensing and services activities and research and development ("R&D") activities. In 2018 and 2017, our Technology segment incurred approximately 55% of all R&D costs.

EBITDA improved in 2018 primarily due to higher licensing revenues.

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

	Year Ended 31 December	
Millions of U.S. Dollars	2018	2017
Sales and other operating revenues	$ 583	$ 450
EBITDA	328	223

Revenues—Revenues increased by $133 million in 2018 compared to 2017.

Higher licensing revenues were responsible for a revenue increase of 23% in 2018, relative to the corresponding period in 2017. Higher customer demand led to increased catalyst volumes in 2018 resulting in a revenue increase of 3%. Favorable foreign exchange impacts in 2018 led to an additional revenue increase of 4%.

EBITDA—EBITDA in 2018 increased by $105 million compared to 2017.

Higher licensing revenues resulted in EBITDA improvements of 38% in 2018. The catalyst sales volume increase in 2018 discussed above was responsible for a 5% increase in EBITDA. The remaining 4% increase in 2018 EBITDA was due to favorable foreign exchange impacts.

2.1.2 Financial Condition

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

Millions of U.S. Dollars	Year Ended 31 December 2018	2017
Sources (uses) of cash:		
Operating activities	$ 5,328	$ 4,977
Investing activities	(3,541)	(1,544)
Financing activities	(2,920)	(2,859)

Operating Activities—Cash of $5,328 million generated by operating activities in 2018 reflected earnings adjusted for non-cash items and net cash provided by the main components of working capital–accounts receivable, inventories and accounts payable. A $404 million non-cash reduction in unrecognized tax benefits is reflected in Other operating activities in 2018.

In 2018, the main components of working capital provided $111 million of cash. Lower accounts receivable due primarily to lower sales volumes in our O&P-Americas, O&P-EAI and I&D segments at year end and higher accounts payable due to higher feedstock prices were partially offset by an increase in inventory primarily due to the lower sales volumes at year end.

Cash of $4,977 million generated in 2017 primarily reflected profit for the year, adjusted for non-cash items, and $916 million of cash generated by the main components of working capital - accounts receivable, inventories and accounts payable. Higher sales prices across all of our segments in the fourth quarter of 2017 and brief delays in the receipt of payments for products in our Refining and I&D segments led to the increase in accounts receivable. Inventories increased for most products in our O&P-EAI and O&P-Americas segments and included an inventory build in our O&P-Americas segment in anticipation of first quarter 2018 turnaround activities These increases were partly offset by an increase in feedstock prices in the fourth quarter of 2017 in our O&P-Americas, O&P-EAI and Refining segments which led to an increase in accounts payable.

Investing Activities—We invested cash of $3,541 million in 2018 and $1,544 million in 2017.

In August 2018, we acquired A. Schulman for $1,776 million, which is net of $81 million of cash acquired and a liability deemed as a component of the purchase price. For additional information on this transaction, see Note 5 to the Consolidated Financial Statements.

We invest in investment-grade and other high-quality instruments that provide adequate flexibility to redeploy funds as needed to meet our cash flow requirements while maximizing yield. In 2018 and 2017, we invested $50 million, and $653 million, respectively, in securities that are classified as fair value through other comprehensive income. We also invested $64 million in equity securities in 2018. In 2017, we invested $512 million in tri-party repurchase agreements. These investments are classified as short-term loans receivable. We received proceeds upon the sale and maturity of certain of our fair value through other comprehensive income and repurchase agreements of $423 million and none, respectively, in 2018; and $574 million and $381 million, respectively, in 2017. In 2018, we also received proceeds of $97 million on the sale of a portion of our investment in equity securities. See Note 4 to the Consolidated Financial Statements for additional information regarding these investments.

Joint Venture Activity—In September 2017, we sold our 27% interest in our Geosel joint venture and received proceeds of $155 million.

In April 2017, we increased our interest in the entity that holds our equity interest in Al Waha Petrochemicals Ltd. from 83.79% to 100% by paying $21 million to exercise a call option to purchase the remaining 16.21% interest held by a third party.

Financial Instruments Activity—Upon expiration in 2018 and 2017, we settled foreign currency contracts with a notional value of €925 million and €550 million, respectively, which were designated as net investment hedges of our investments in foreign subsidiaries. Payments to and proceeds from our counterparties resulted in a net cash inflow of $30 million and net cash outflow of $49 million during 2018 and 2017, respectively. See 4 to the Consolidated Financial Statements for additional information regarding these foreign currency contracts.

Sale of Subsidiaries—In October 2018, we received net cash proceeds of $37 million for the sale of our carbon black subsidiary in France.

The following table summarizes our capital expenditures for 2018 and 2017:

	Year Ended 31 December	
Millions of U.S. Dollars	2018	2017
Capital expenditures by segment:		
O&P-Americas	$ 1,079	$ 741
O&P-EAI	248	163
I&D	409	332
APS	62	55
Refining	250	213
Technology	48	32
Other	9	11
Consolidated capital expenditures of continuing operations	$ 2,105	$ 1,547

In 2019, we expect to spend approximately $2.8 billion for capital expenditures and contributions to our PO joint ventures. The higher levels of expected capital expenditures in 2019 and 2018 relative to their respective comparative periods are largely driven by construction related to our new *Hyperzone* polyethylene plant at our La Porte, Texas facility and for the construction related to our new PO/TBA plant in Texas.

Financing Activities—Financing activities used cash of $2,920 million and $2,859 million during 2018 and 2017, respectively.

We made payments totaling $1,854 million and $866 million in 2018 and 2017, respectively, to repurchase a portion of our outstanding ordinary shares. We also made dividend payments totaling $1,554 million and $1,415 million to our shareholders in 2018 and 2017, respectively. For additional information related to these share repurchases and dividend payments, see Note 24 to the Consolidated Financial Statements.

In September 2018, we repaid the $375 million 6.875% Senior Notes due June 2023 assumed in the acquisition of A. Schulman for a price of 105.156% of par.

In March 2017, we issued $1,000 million of 3.5% guaranteed notes due 2027 and received net proceeds of $990 million. The proceeds from these notes, together with available cash, were used to repay $1,000 million of our outstanding 5% senior notes due 2019. We paid $65 million in premiums in connection with this prepayment.

Through the issuance and repurchase of commercial paper instruments under our commercial paper program, we received net proceeds of $810 million in 2018. We made net repayments of $493 million in 2017.

Additional information related to our commercial paper program and the issuance and repayment of debt can be found in the Liquidity and Capital Resources section below and in Note 26 to the Consolidated Financial Statements.

Liquidity and Capital Resources

As of 31 December 2018, we had $1,307 million unrestricted cash and cash equivalents and marketable securities classified as fair value through other comprehensive income and fair value through profit and loss. We also held $544 million of tri-party repurchase agreements classified as other receivables at 31 December 2018. For additional information related to our purchases of marketable securities, which currently include time deposits, certificates of deposit, commercial paper, bonds and limited partnership investments, and our investments in tri-party repurchase agreements, see the Investing Activities section above and Note 4 to the Consolidated Financial Statements.

At 31 December 2018, we held $269 million of cash in jurisdictions outside the U.S., principally in Europe and Asia. There are currently no material or legal or economic restrictions that would impede our transfers of cash.

We also had total unused availability under our credit facilities of $2,517 million at 31 December 2018, which included the following:

- $1,688 million under our $2,500 million revolving credit facility, which backs our $2,500 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 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 31 December 2018, we had $809 million of outstanding commercial paper, no outstanding letters of credit and no outstanding borrowings under the facility; and

- $829 million under our $900 million U.S. accounts receivable 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 31 December 2018.

At 31 December 2018, we had total debt, including current maturities, of $9,563 million and $214 million of outstanding letters of credit, bank guarantees and surety bonds issued under uncommitted credit facilities.

In February 2019, LYB Americas Finance Company LLC ("LYB Americas Finance"), a direct, 100% owned finance subsidiary of LyondellBasell Industries N.V., entered into a 364-day, $2,000 million senior unsecured term loan credit facility and borrowed the entire amount. The proceeds of this term loan, which is fully and unconditionally guaranteed by LyondellBasell Industries N.V. are intended for general corporate purposes, including the repayment of debt.

Borrowings under the credit agreement will bear interest at either a LIBOR rate or a base rate, as defined, plus in each case, an applicable margin determined by reference to LyondellBasell N.V.'s current credit ratings.

The credit agreement contains customary covenants and warranties, including specified restrictions on indebtedness, including secured and subsidiary indebtedness, and merger and sales of assets. In addition, we are required to maintain a leverage ratio at the end of every fiscal quarter of 3.50 to 1.00 or less.

In February 2019, proceeds from the credit facility were used to redeem the remaining $1,000 million outstanding of our 5% Senior Notes due 2019 at par. In conjunction with the redemption of these notes, we recognized non-cash charges of less than $1 million for the write-off of unamortized debt issuance costs and $8 million for the write-off of the cumulative fair value hedge accounting adjustment related to the redeemed notes.

In July 2018, we amended our $900 million U.S. accounts receivable facility. This amendment, among other things, extended the term of the facility to July 2021.

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.

See Note 26 to the Consolidated Financial Statements for additional information related to our credit facilities and Notes discussed above, including redemption terms.

In 2018, our shareholders approved a proposal to authorize us to repurchase up to an additional 10%, or 57,844,016, of our ordinary shares through December 2019 ("2018 Share Repurchase Program"). As a result, the authorization of the remaining unpurchased shares under the share repurchase program approved by our shareholders in May 2017 ("2017 Share Repurchase Program") was superseded. 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. In 2018, we purchased approximately 19 million shares under these programs for approximately $1,878 million. As of 19 February 2019, we had approximately 38 million shares remaining under the current authorization. The timing and amounts of additional shares repurchased will be determined based on our evaluation of market conditions and other factors. For additional information related to our share repurchase programs, see Note 24 to the Consolidated Financial Statements.

We may repay or redeem our debt, including purchases of our outstanding bonds in the open market, using cash and cash equivalents, cash from our short-term investments and tri-party repurchase agreements, cash from operating activities, proceeds from the issuance of debt, proceeds from asset divestitures or a combination thereof. In connection with any repayment or redemption of our debt, we may incur cash and non-cash charges, which could be material in the period in which they are incurred.

Construction of our *Hyperzone* high density polyethylene plant at our La Porte, Texas site, which commenced in May 2017, is on track for planned start-up in the third quarter of 2019.

In July 2017, we announced our final investment decision to build a world-scale PO/TBA plant in Texas with a capacity of 1 billion pounds of PO and 2.2 billion pounds of TBA. In August 2018, we broke ground on this project, which is estimated to cost approximately $2.4 billion. We anticipate the project to be completed in the third quarter of 2021.

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 current liquidity availability and cash from operating activities 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 31 December 2018, 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:

		Payments Due By Period					
Millions of U.S. Dollars	**Total**	**2019**	**2020**	**2021**	**2022**	**2023**	**Thereafter**
Total debt, nominal value	$ 9,730	$ 1,913	$ 40	$ 1,039	$ 897	$ 790	$ 5,051
Interest payment on total debt	5,155	382	357	357	298	281	3,480
Contract liabilities	138	128	1	—	—	—	9
Other	1,714	1,287	81	43	17	28	258
Deferred income taxes	2,021	299	124	118	123	73	1,284
Purchase obligations:							
Take-or-pay contracts	17,287	2,333	2,308	2,203	1,871	1,857	6,715
Other contracts	10,827	5,357	2,408	1,462	248	235	1,117
Operating leases	2,475	365	288	256	236	204	1,126
Total	$ 49,347	$ 12,064	$ 5,607	$ 5,478	$ 3,690	$ 3,468	$ 19,040

Total Debt—Our debt includes unsecured senior notes, guaranteed notes and various other U.S. and non-U.S. loans. See Note 26 of 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 28 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 2019 are not expected to be materially different than the expected 2019 contributions disclosed in Note 28 to the Consolidated Financial Statements. At 31 December 2018, the projected benefit obligation for our pension plans exceeded the fair value of plan assets by $1,027 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 $1,027 million, with interest, in future years. We contributed $100 million and $103 million to our pension plans in 2018 and 2017, respectively. We provide other postretirement benefits, primarily medical benefits to eligible participants, as described in Note 28 to the Consolidated Financial Statements. We pay other unfunded postretirement benefits as incurred.

Contract Liabilities—We are obligated to deliver products in connection with long-term sales agreements under which advances from customers were received before transfer of control to the customers occurs. These contract liabilities will be recognized in earnings when control of the product or service is transferred to the customer, which range predominantly from 1 to 15 years. The unamortized long-term portion of such advances totaled $10 million as of 31 December 2018.

Other—Other primarily consists of accruals for environmental remediation costs, obligations under deferred compensation arrangements, and anticipated asset retirement obligations.

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 27 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 31 December 2018.

Operating Leases—We lease various facilities and equipment under non-cancelable lease arrangements for various periods. See Note 31 to the Consolidated Financial Statements for related lease disclosures.

2.1.3 Outlook

During the first months of 2019, we have seen normalization of markets with increased polymer demand and modest improvements in the discount for Maya crude oil. We expect our growth to accelerate in 2019 with the planned start-up of our new *Hyperzone* polyethylene plant in the third quarter and continued construction of our new PO/TBA plant which is on track for completion in 2021. Global polyethylene capacity additions are expected to moderate during 2019 and 2020, providing support for high industry operating rates and ethylene chain profitability.

O&P Americas: The planned Industry US Gulf Coast capacity additions in 2019 for ethylene and polyethylene are likely to arrive ahead of planned NGL pipeline and fractionation capacity additions which are expected to provide downward margin pressure for polyethylene and ethylene during 2019. Continuation of healthy global demand and of the upward trend in oil prices would help mitigate such declines. Polypropylene fundamentals remain good in 2019, although propylene feedstock cost swings may result in increased margin volatility.

O&P EAI: Business conditions for most of our O&P EAI businesses are challenging for 2019 but are still healthy from a historical perspective. We expect the impact of unplanned maintenance, feedstock supply limitation and low Rhine River levels to largely be resolved during the second quarter. Demand remains good, but the impact of higher oil price and FX rates on the EU global competitive position will provide a challenge in 2019.

I&D: Record earnings in 2018 were largely driven by margin improvements across all products due to tight market conditions and improved contracting strategies. While we expect market to be more balanced in 2019 we expect continued benefits from improved contracting strategies in future years. During the first quarter we expect some moderation in methanol pricing, but we should see improved PO and Derivatives volumes for the segment due to the completion of planned maintenance at our Bayport, Texas facility during the fourth quarter.

APS: The APS segment formed in 2018 after the completion of the A. Schulman acquisition in August 2018. For 2019 we expect to see continued improvement in this segment as we begin 2019 with the return of higher seasonal volumes and our continued focus on capturing value from integration activities.

Refining: With our planned maintenance completed during the fourth quarter of 2018, the refinery is prepared to run full rates for the next few years and benefit from expected market opportunities**.** Spreads are improving from the historic low Maya 2-1-1 crack during the fourth quarter as PEMEX adjusts the monthly K factor of the Maya crude oil price formula to ensure that Mexican crude remains competitively priced for the U.S. Gulf Coast refining market.

Technology: The Technology business is also expected to further improve 2019 earnings, with continued healthy market conditions for catalysts and a further step up in Licensing earnings as several major projects will be realized in 2019 income.

2.2 Risk Factors

The factors described below represent the principal risks to an investment in LyondellBasell. Any of these factors, taken alone or in combination, could adversely affect our business, operating results and financial condition, as well as the value of an investment in our securities and our ability to execute our strategy.

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 appropriate for our business and operations as well as in line with 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.

A sustained 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. crude oil prices to natural gas prices in recent years. If the price of crude oil 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 resulting from natural disasters, water levels, and interruptions in marine water routes, among other causes, 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, increasing exports of NGLs and crude oil from the U.S. or greater restrictions on hydraulic fracturing 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.

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

We obtain a portion of our principal raw materials from sources in the Middle East and Central 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 more likely to substantially increase the price and decrease the supply of raw materials necessary for our operations, which could 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 the Middle East and South America. 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 trading partners.

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 could 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.

We also derive significant revenues from our business in emerging markets, particularly the emerging markets in Asia and South America. 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 cyclicality 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 cyclicality 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 recently started up 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. Often, 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 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 would reduce our profitability. Competitors with different cost structures or strategic goals than we have 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 a portion 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.

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; and
- 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 security measures, 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 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 trade restrictions or 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. Trade protection measures such as quotas, duties, tariffs, safeguard measures or anti-dumping duties imposed in the countries in which we operate could negatively impact our business. 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 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 Industries 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 U.S., The Netherlands, Germany, France, and Italy.

In 2017, the U.S. enacted "H.R.1," also known as the "Tax Cuts and Jobs Act" (the "Tax Act"), materially impacting our Consolidated Financial Statements by, among other things, decreasing the tax rate and significantly affecting future periods. To determine the full effects of the tax law for 2018, we are awaiting the finalization of several proposed U.S. Treasury regulations under the Tax Act that were issued during 2018, as well as additional regulations to be proposed and finalized pursuant to the U.S. Treasury's expanded regulatory authority under the Tax Act. It is also possible that technical correction legislation concerning the Tax Act could retroactively affect tax liabilities for 2018.We will continue to analyze the Tax Act to determine the full effects of the new law as additional regulations are proposed and finalized.

Interest income earned by certain of our European subsidiaries through intercompany financings is either untaxed or taxed at rates substantially lower than the U.S. statutory rate. Tax regulations proposed in 2018 may affect tax deductible interest in the U.S. in future periods; however, we do not believe they will have a material impact as proposed. In addition, in 2016 the U.S. Treasury issued final Section 385 debt-equity regulations that impact our internal financings beginning in 2017. Pursuant to a 2017 Executive Order, the Treasury Department reviewed these regulations and determined that they should be retained, subject to further review following the enactment of U.S. tax reform. We are awaiting the U.S. Treasury's review of the existing Section 385 debt-equity regulations which could impact our internal financings in future years as well as any final regulations impacting interest deductions under the Tax Act. In addition, there has been an increased attention, both in the U.S. and globally, to the tax practices of multinational companies, including the European Union's state aid investigations and proposals by the Organization for Economic Cooperation and Development with respect to base erosion and profit shifting, and European Union tax directives. Such attention may result in additional legislative changes that could adversely affect our tax rate. Other than the Tax Act, 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.

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, intermediate chemicals, polyolefins, licensing and catalysts. 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 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 our 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 financial reporting systems to provide adequate and timely information for our reporting purposes.

Our joint venture partners may have different interests or goals than we do and may take actions contrary to our requests, policies or objectives. 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 may develop a dispute with any of our partners over decisions affecting the venture that may result in litigation, arbitration or some other form of dispute resolution. If a joint venture participant acts contrary to our interest, it could harm our brand, business, results of operations and financial condition.

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 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 related 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 and regulations 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. Under the 2015 Paris Agreement, parties to the United Nations Framework Convention on Climate Change agreed to undertake ambitious efforts to reduce GHG emissions and strengthen adaptation to the effects of climate change. While the U.S. notified the United Nations in August 2017 that it will be withdrawing from the Agreement, other countries in which we operate, including Germany, France, and the Netherlands, are preparing national climate acts and protection plans to implement their emission reduction commitments under the Agreement. These actions could result in increased cost of purchased energy and increased costs of compliance for impacted locations. 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 GHG performance standards for some facilities. Although the EPA recently proposed to repeal and replace certain GHG requirements, additional GHG regulation may be forthcoming at the U.S. federal or state level that 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. In addition, climate changes, such as drought conditions or increased frequency and severity of hurricanes and floods, could have an adverse effect on our assets and 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 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.

Increased regulation or deselection of plastic could lead to a decrease in demand growth for some of our products.

In 2018, the European Union proposed rules to target the plastic products most often found on beaches and in seas. In addition, local and other governments have increasingly proposed or implemented bans on plastic items such as disposable bags and straws, as well as other food packaging. Additionally, plastics have recently faced increased public backlash and scrutiny. Increased regulation of, or prohibition on, the use of plastics could increase the costs incurred by our customers to use such products or otherwise limit the use of these products, and could lead to a decrease in demand for PE, PP, and other products we make. Such a decrease in demand could adversely affect our business, operating results and financial condition.

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, $2.5 billion revolving credit facility, which backs our commercial paper program, to meet our cash needs, to the extent available. As of 31 December 2018, we had no borrowings or letters of credit outstanding under the facility and $809 million, net of discount, outstanding under our commercial paper program, leaving an unused and available credit capacity of $1,688 million. We may also meet our cash needs by selling receivables under our $900 million U.S. accounts receivable 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 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 have an adverse impact on our business and 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 rates used to measure pension obligations, the level of plan assets available to fund those obligations at the measurement date and the expected long-term rates 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 changes in key actuarial assumptions, such as the discount rate or mortality 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.

Nearly all of our current pension plans have projected benefit obligations that exceed the fair value of the plan assets. As of 31 December 2018, the aggregate deficit was $992 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.

Integration of acquisitions could disrupt our business and harm our financial condition and stock price.

We have and may continue to make acquisitions in order to enhance our business. Acquisitions involve numerous risks, including with respect to meeting our standards for compliance, problems combining the purchased operations, technologies or products, unanticipated costs and liabilities, diversion of management's attention from our core businesses, and potential loss of key employees.

There can be no assurance that we will be able to integrate successfully any businesses, products, technologies, or personnel that we might acquire. The integration of businesses that we may acquire is likely to be a complex, time-consuming, and expensive process and we may not realize the anticipated revenues, synergies, or other benefits associated with our acquisitions if we do not manage and operate the acquired business up to our expectations. If we are unable to efficiently operate as a combined organization utilizing common information and communication systems, operating procedures, financial controls, and human resources practices, our business, financial condition, and results of operations may be adversely affected.

2.3 Our Strategy

We work every day to be the best operated, most respected company in our industry. We strive to consistently outperform the competition by safely and reliably delivering high quality products to customers; being the company of choice for employees and shareholders; and being a responsible, good neighbor in the communities where we operate.

We are progressing this vision based on a foundation of operational excellence, cost discipline, and prudent financial stewardship. In 2018, we advanced more substantial and proactive growth plans. We intend to extend our reach and apply these foundational strengths across a larger set of assets.

- **Operational excellence of existing assets:** The Company continues to benefit from strong operational reliability and efficiency in our existing asset base, grounded in differential industrial and process safety performance, environmental stewardship, and disciplined investments to maintain and improve these operations. We continue to realize volume improvements from several recent olefins and polyolefin capacity expansions in the US driven by the ongoing feedstock advantage from the growth of shale gas and oil production.

- **Advancing major organic projects with increased capabilities:** Our current project pipeline includes two world-scale plants in the Houston, Texas area that are well underway: our *Hyperzone* high density polyethylene plant and a PO/TBA plant targeted for 2019 and 2021 startups, respectively. We are also progressing plans for additional olefins debottlenecks at our Channelview site beginning in 2020. We continually evaluate potential projects to support further organic growth.

- **Enhanced abilities to evaluate and execute inorganic growth opportunities:** LyondellBasell's healthy free cash flow and balance sheet provides a strong basis to generate additional value through acquisition. We will focus on where we can extend our strengths and skills to other assets and businesses, both in our current business lines and in areas that overlap, extend, or sit adjacent to our existing petrochemical and polymer footprint. During 2018, we completed the QCP recycling joint venture with Suez and completed the acquisition of A. Schulman which created the world's largest plastics compounding business and our Advanced Polymer Solutions segment. We continued to actively manage our business portfolio with several small acquisitions and divestitures around the world while we evaluate opportunities.

- **Sustainability:** During 2018, actions to launch the Alliance to End Plastic Waste in 2019 were taken by LyondellBasell along with more than 25 of our industry peers and other participants across the value chain that make, use, sell, process, collect and recycle plastics. Together, we have committed over $1 billion with the goal of investing $1.5 billion over the next five years in collaborative partnerships to advance meaningful solutions that eliminate plastic waste in our environment. The Alliance's approach is based on four pillars: infrastructure that stops plastic waste from entering the environment; innovation in materials, technologies and business models that increase the value of plastic waste; engagement with partners in government, business and consumers to enable solutions; and meaningful projects to clean up plastic waste that has already escaped into our environment.

We understand what drives our core advantages and will continue the benchmarking and continuous improvement that extends these leading positions. Our Company has a resilient portfolio of businesses that can leverage geographic, feedstock and market diversity to achieve superior results. Our increasing focus on value generating growth will be guided by advantaged positions and where LyondellBasell's strengths create tangible value.

Our Board is responsible for overseeing the overall course of our business and achievement of our strategy. Each year, the Company's management develops both an annual financial operating plan and a multi-year strategic business plan, each of which are subject to the review and approval of the Board. Members of the Board are updated regularly by our management regarding the Company's progress in achieving its financial and strategic goals.

2.4 Sustainability

LyondellBasell is committed to sustainable development and in 2018 we released our first corporate Sustainability Report that sets forth our approach to sustainability and shared our progress in managing our environmental footprint. We define sustainability as the responsible and ethical use of resources to improve the everyday quality of life in the world around us. Through our stewardship of natural resources and with a focus on technological advancements, we believe we can help improve the quality of life today and for future generations.

As a significant participant in the global economy, our objectives are to:

- Create value for our investors and customers;
- Protect the well-being of our employees, contractors and the communities in which we operate;
- Manage the safe use of our products;
- Protect the environment and preserve resources for future generations; and
- Supply products that enhance the quality of life worldwide.

We strive to create better environmental and social outcomes in the way we do business. Promoting safe, efficient, and ethical business practices provides better results not only for us, but also for the customers we serve and the communities in which we operate. Our business approach and drive for innovation are underpinned by key sustainability themes such as resource efficiency, safety, governance, and productive stakeholder dialogue. Whether addressing energy challenges or speaking with our local communities, we work continuously towards sustainable successful outcomes. We are committed to protecting the environment, human health and safety in the communities where we operate. We deliver on this commitment by:

- Producing the basic building blocks for products that enhance consumer safety, quality of life, convenience and energy conservation;
- Minimizing our impact on the environment; and
- Supporting a variety of community service activities.

We are dedicated to safety excellence. In 2018, LyondellBasell continued to operate with industry leading safety performance. The Company's safety performance in 2018, measured by total recordable incident rate for employees and contractors, was 0.18. We utilize the U.S. Occupational Safety and Health Administration definition for injury rate, which is the number of injuries recorded per 200,000 hours worked.

Our operational excellence philosophy establishes uniform management system requirements for areas that have a direct impact on our operating performance. These management system requirements include programs for mechanical integrity and inspection, management of change, process hazard analysis, risk assessment, incident investigation and reporting, and the maintenance of process safety information. Other elements essential to a successful Operational Excellence program include effective communication and employee training.

Our process safety program is focused on the pro-active identification and management of hazards in our operations. It plays a significant role in our overall safety performance and in fulfilling our commitment to operate in a manner that protects our people, the environment and our business relationship with our customers.

Our product stewardship efforts promote the safe and responsible use of our products. We strive to understand the safety, health and environmental issues associated with the manufacture, distribution and use of our products and we share that understanding with our customers and other stakeholders.

2.5 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 2018 and 2017, our R&D expenditures were $99 million and $90 million, respectively. A portion of these expenses are related to technical support and customer service and are allocated to the other business segments. In 2018 and 2017, approximately 45% of all R&D costs were allocated to business segments.

2.6 Governance Report of the Board of Directors

Our Board of Directors is responsible for overseeing the overall course of our business and strategy. Members of the Board are annually elected by shareholders and include our Chief Executive Officer and independent non-executives. Our Board and its committees oversee:

- Management's identification, measurement, monitoring, and control of our Company's material risks, including operational, credit, market, liquidity, compliance, strategic, and reputational risks;
- The Company's maintenance of high ethical standards and effective policies and practices to protect our reputation, assets, and business;
- Management's development and implementation of an annual financial operating plan and a multi-year strategic business plan, and our progress meeting these financial and strategic plans;
- The assessment of operational performance, the importance of environmental health and safety programs and the Company's performance with respect to key technologies;
- The corporate audit function, our independent registered public accounting firm, and the integrity of our consolidated financial statements; and
- The establishment, maintenance, and administration of appropriately designed compensation programs and plans.

The Board is also responsible for:

- Reviewing, monitoring, and approving succession plans for the Board, our CEO and other key executives to promote senior management continuity;
- Conducting an annual self-evaluation of the Board and its committees;
- Identifying and evaluating director candidates and nominating qualified individuals for election to serve on our Board; and
- Reviewing our CEO's performance and approving the total annual compensation for our CEO and other executive officers.

Our Board currently has twelve members. Our Articles of Association provide that the Board will consist of at least nine members, including at least one executive director who will be the CEO. The Rules for the Board provide that the Board, in its sole discretion, shall determine the size of the Board in accordance with and in order to comply with our Articles of Association, our nomination agreement with Access Industries and applicable law or regulation, including the listing standards of the New York Stock Exchange ("NYSE"), provided that the Board will have no more than twelve members. All directors are elected annually in accordance with our Articles of Association.

The members of the Board are elected by the general meeting of shareholders from a list of nominees that is selected and approved by the Board. Pursuant to our Articles of Association, the nominations are binding but may be overridden by two-thirds of the votes cast at the meeting if those two-thirds votes constitute more than one-half of the issued share capital of the Company.

The table below shows information for each member of our Board as of 10 April 2019.

Jacques Aigrain, French-Swiss, 64, Chairman of the Board of Directors, Director since 2011
Mr. Aigrain is our Chairman of the Board and a Senior Advisor and former Partner of Warburg Pincus, a global private equity firm. Prior to joining Warburg Pincus in 2013, Mr. Aigrain served as Chief Executive Officer of Swiss Re, a publicly traded insurance company, and was Co-Global Head of M&A and Head of Financial Institutions at J.P. Morgan. He also has many years of experience as a director of public and multinational organizations, including The London Stock Exchange Group plc and WPP plc, a multinational advertising and public relations company. Mr. Aigrain's more than 30 years of financial services and management experience provide him with expertise in all areas of strategy, mergers and acquisitions, finance, and capital markets. Additionally, he brings substantial knowledge of board- and governance-related matters.
Lincoln Benet, American-British, 55, Director since 2015
Mr. Benet has served as Chief Executive Officer of Access Industries, a privately held industrial group with world-wide holdings, since 2006. Prior to joining Access, he spent 17 years at Morgan Stanley, including as Managing Director. Mr. Benet also has experience serving on the boards of several privately-held companies, including those in the investment, music and publishing, oil and gas pipes and tubing, cement, sports media, and petrochemicals industries. As a result of this background, he brings to our board a working knowledge of global markets, mergers and acquisitions, executive management, strategic planning, and corporate strategy, as well as experience with international finance, including corporate finance matters such as treasury, insurance, and tax.

Jagjeet Bindra, American, 71, Director since 2011

Mr. Bindra is a retired executive of Chevron, a multinational energy corporation, where he spent 32 years in senior leadership positions and retired as President of the company's worldwide manufacturing operations. Mr. Bindra holds a degree in chemical engineering and started his career at Chevron as a research engineer before progressing to increasingly senior positions, including the roles of Manager of Strategic Planning and Group Manager of Projects & Engineering Technology. His education and background provide him with extensive knowledge of global manufacturing, capital project management, engineering technology, strategic business planning, and health, safety, and environmental and operations matters. Mr. Bindra has served as a board member of multiple private and publicly traded companies, including Edison International and its subsidiary, Southern California Edison, WorleyParsons, and Transocean Ltd., and he has broad knowledge of board and governance matters. Mr. Bindra currently serves as a member of the board of HPCL-Mittal Energy Limited (India).

Robin Buchanan, British, 67, Director since 2011

Mr. Buchanan is a director of Schroders plc, a global asset management firm, a director of Cicap Ltd, a global private equity firm, and the former Chairman of PageGroup plc, a global specialist recruitment company. He was previously Dean and President of London Business School and UK Senior Partner and member of the worldwide board of directors of Bain & Company Inc., a global business consulting firm, where he continues to serve in an advisory role. He also serves as an advisor to Access Industries and Non-Executive Chairman of its Advisory Board, which advises on portfolio strategy. Mr. Buchanan's experience as a board member of publicly traded, private, and charitable companies, Dean of a leading Business School, and long tenure with Bain provide him with deep experience in strategy, leadership, board effectiveness, business development, and acquisitions across most industry sectors, including considerable involvement with chemicals and energy in Europe. He also brings a wealth of experience in board and governance matters, particularly as related to multi-national companies. Mr. Buchanan is a Chartered Accountant and a published author on strategy, acquisitions, leadership, board effectiveness, corporate governance, and compensation.

Stephen Cooper, American, 72, Director since 2010

Mr. Cooper has served as Chief Executive Officer and Director of Warner Music Group Corp., a recorded music and music publishing business, since 2011. He has also been a Managing Partner of Cooper Investment Partners, a private equity firm specializing in underperforming companies, since 2008. In the course of a long career as a financial advisor and corporate turnaround specialist, Mr. Cooper has served as the top executive of a number of publicly traded companies, including as Chief Executive Officer of Metro-Goldwyn-Mayer, Inc., a media company focused on film and television, and Hawaiian Telecom, the dominant telecom services provider in Hawaii. Mr. Cooper has expansive knowledge and experience relating to all matters of executive management, finance, and strategy, and due to his role as a sitting CEO he has deep insight into day-to-day business, management, and strategy issues.

Nance Dicciani, American, 71, Director since 2013

Ms. Dicciani is a retired senior executive and chemical engineer. She spent her early career in research and development at Air Products and Chemicals, and then joined Rohm and Haas, a specialty chemicals manufacturer, as business director for the Petroleum Chemicals Division. After 10 years with Rohm and Haas in which she rose to the level of Senior Vice President, Ms. Dicciani became President and Chief Executive Officer of Honeywell Specialty Materials, also a chemicals manufacturer. Ms. Dicciani served on the Executive Committees of the American Chemistry Council and the Society of Chemical Industry and was appointed by George W. Bush to the President's Council of Advisors on Science and Technology. Her background provides her with specific industry knowledge and an understanding of manufacturing, health, safety, and environmental matters; insight into the competitive landscape relevant to our industry; and a wealth of experience in all areas of executive management. Ms. Dicciani also has extensive experience in board and governance matters and has served as a director of several public companies, including Halliburton, an oilfield services company, and Linde, an industrial gases company.

Claire Farley, American, 60, Director since 2014

Ms. Farley is an advisor to KKR Energy Group and a retired executive in the oil and gas exploration and production industry. Ms. Farley has served in several roles with KKR Energy Group since 2011, including as Vice Chair from 2016 to 2017 and as a member of KKR Management LLC, the general partner of a global investment firm, from 2013 to 2015. Prior to joining KKR, Ms. Farley served as Chief Executive Officer of Randall & Dewey, an oil and gas asset transaction advisory firm. She became Co-President and then Senior Advisor at Jeffries & Company after Randall & Dewey became its oil and gas investment banking group, and then co-founded RPM Energy, a privately-owned oil and natural gas exploration and development company. Ms. Farley brings to the Board experience in business development, mergers, acquisitions, and divestitures, as well as knowledge of the chemical industry's feedstocks and their markets. She also has experience in all matters of executive management and a deep understanding of public company and governance matters due to her service on the boards of companies including Anadarko Petroleum Corporation, Encana Corporation, and TechnipFMC.

Bella Goren, American, 58, Director since 2014

Ms. Goren has served in a wide range of executive roles in capital intensive and highly competitive global businesses, most recently as Chief Financial Officer of American Airlines, Inc. and its parent company, AMR Corporation, from 2010 to 2013. Her 27-year career at American and AMR spanned leadership roles in Revenue Management, Investor Relations, Operations, and Customer Service, including being the head of American's Asia Pacific Division and Customer Relationship Marketing. Ms. Goren was also President of AMR Services, an AMR Corporation subsidiary company with operations at 60 locations worldwide. Her experience and areas of expertise include strategic planning, management of complex international operations, business development, global asset management, and corporate finance. Ms. Goren is also a chemical engineer and began her career at DuPont. As a board member of major multinational companies, including MassMutual Financial Group and Gap Inc., she brings public company director experience and extensive knowledge of corporate governance matters.

Michael Hanley, Canadian, 53, Director since 2018

Mr. Hanley has 25 years of experience in senior management and finance roles, including as Chief Financial Officer of Alcan, a Canadian mining company and aluminum manufacturer, President and CEO of Alcan's Global Bauxite and Alumina business group, and Senior Vice President, Operations & Strategy of the National Bank of Canada. He brings strong financial and operational experience, deep knowledge of capital-intensive and process industries, experience with U.S. and international accounting standards, and a broad understanding of international markets. Mr. Hanley also has significant experience on public company boards and in the role of audit committee chair, and an appreciation for corporate governance matters and the board's role in financial oversight. He is currently a member of the board of the Quebec chapter of the non-profit Canadian Institute of Corporate Directors, and is a member of the Quebec Order of Chartered Professional Accountants.

Bhavesh Patel, American, 52, Director since 2018, Chairman of the Management Board 2015-2018

Mr. Patel has served as our Chief Executive Officer since January 2015. From the time he joined the Company in 2010 until his appointment as CEO, he held the roles of Senior Vice President, Olefins and Polyolefins-Americas and Executive Vice President, Olefins and Polyolefins-Europe, Asia, International & Technology, with additional responsibility for all manufacturing operations outside of the Americas and the Company's Polypropylene Compounding business. Taken together with his previous tenure with Chevron Corp. and Chevron Phillips Chemical Company, Mr. Patel has nearly 30 years' experience in the chemicals, plastics, and refining industries, including extensive leadership experience on a global basis. This background gives him a detailed understanding of the Company's industries and operations. Mr. Patel serves as a director of Union Pacific Corporation.

Bruce Smith, American, 75, Director since 2010

Mr. Smith is the Chief Executive Officer of One Cypress Energy LLC, a crude petroleum products logistics provider, a position he has held since 2011. Previously, Mr. Smith served as a director of GEVO, Inc., a renewable chemicals and advanced biofuels company, from 2010 to 2015. Mr. Smith has extensive expertise in executive management and publicly traded company matters, as well as a robust knowledge of manufacturing, capital projects, health, safety, and environmental and operations matters, and the refining industry generally. He also has experience in all areas of finance, having served in corporate treasury and chief financial roles.

Rudy van der Meer, Dutch, 74, Director since 2010

Mr. van der Meer's career includes a more than 30-year tenure with AkzoNobel N.V., a multinational paints, coatings, and specialty chemicals producer, where he retired as a senior executive. He has extensive industry experience, including with manufacturing, health, safety, and environmental and operations matters. Mr. Van der Meer has served on the boards of several Dutch multinational companies, providing him with a deep understanding of public company governance matters, including those relevant to our incorporation in the Netherlands. He is a Supervisory Director of James Hardie Industries S.E., an industrial fiber cement products and systems manufacturer. He also has served as Chairman of the Supervisory Boards of Coöperatie VGZ U.A., a health insurer, Royal Imtech N.V., a technical services provider, and Energie Beheer Nederland B.V., a natural gas exploration and production company.

Independence of Board Members

Our Board has adopted categorical standards that are used to assist in independence determinations. The categorical standards meet and in some instances exceed the requirements of the NYSE. To qualify as independent under our categorical standards, a director must be determined to have no material relationship with LyondellBasell other than as a director. The categorical standards include strict guidelines for non-executive directors and their immediate families regarding employment or affiliation with LyondellBasell as well as with its independent registered public accounting firm. Our categorical standards are included in our Corporate Governance Guidelines and can be found on our website at www.lyondellbasell.com.

The Board has determined that there are no relationships or transactions that prohibit any of the non-executive directors from being deemed independent under the categorical standards and that each of our non-executive directors is independent. In addition to the relationships and transactions that would bar an independence finding under the categorical standards, the Board considered all other known relationships and transactions in making its determination. Transactions and relationships considered included:

- **Access:** Mr. Benet is CEO of Access Industries, the Company's largest shareholder; Mr. Buchanan is an adviser to Access Industries and Non-Executive Chairman of its Advisory Board, which advises on portfolio strategy; and Mr. Cooper is CEO of Warner Music, a subsidiary of Access Industries.

- **Bindra:** The Company licenses certain technology and engineering services to HPCL-Mittal Energy Limited, where Mr. Bindra is a director.

- **Buchanan:** The Company has engaged Bain & Company, where Mr. Buchanan was previously a partner and continues in a limited and unrelated advisory role, for certain strategic planning and transaction advisory services.

- **Dicciani:** The Company purchased certain La Porte, Texas assets from Linde plc, where Ms. Dicciani is a director. The Company also purchases industrial gases from, and sells crude hydrogen to, Linde, and Linde provides technical services to certain company sites in Europe which license its technology. The Company sells temporary chemical diverters for well completion to Halliburton, where Ms. Dicciani is a director.

- **Farley:** The Company purchases measurement products from TechnipFMC, where Ms. Farley is a director. The Company makes spot purchases of natural gas and natural gas liquids from Anadarko Petroleum Corporation, where Ms. Farley is a director.

- **Hanley:** The Company sells polypropylene to Shawcor Ltd., where Mr. Hanley is a director.

- **Goren:** The Company purchases employee medical insurance from MassMututal Asia, an affiliate of MassMutual Financial Group, where Ms. Goren is a director.

- **Patel:** Union Pacific Corporation, where Mr. Patel serves as a director, provides transportation services to the Company.

In determining that none of these transactions or relationships affected the independence of any of the interested directors, the Board considered that all of the transactions are ordinary course and none of the dollar amounts involved were material to the Company or the relevant counterparty. Additionally, the Board determined that notwithstanding the relationships between certain directors and the Company's largest shareholder, Access Industries, these directors are independent for purposes of NYSE listing standards and the Company's categorical standards. However, under the Dutch Corporate Governance Code, a director is not considered to be independent if he is a representative in some way of an entity which holds at least 10% of the Company's shares. The Dutch Corporate Governance Code further provides that there should be no more than one director at any time who can be considered to be affiliated with or representing such a 10% shareholder. Although our Board has determined that each of Messrs. Benet, Buchanan, and Cooper is independent for the purposes of the NYSE listing standards and the Company's categorical standards, their nomination by Access Industries renders them not independent under the Dutch Corporate Governance Code, and the Company does not meet the requirement that there be no more than one director representing Access Industries as described above. Our Board believes that application of the NYSE independence standards is more appropriate for LyondellBasell, which is listed only on the NYSE and not on any exchange in the Netherlands. Our Board further believes that the service of Access nominees on the Company's key independent committees provides those committees with shareholder perspective and the significant skills, experience and qualifications of these directors, to the benefit of the Board, the Company, and our stakeholders more generally. In the opinion of the Board, each of the other independence requirements set forth in sections 2.1.7 through 2.1.9 of the Dutch Corporate Governance Code has been fulfilled.

Meetings and Board Committees

The Board held four regularly scheduled meetings, five special meetings, and two information sessions in 2018. Our Compensation Committee, Nominating and Governance Committee and HSE&O Committee meet in connection with each regularly scheduled Board meeting (other than the Board's strategy session held in July) and hold additional meetings as needed, while other Committees meet independently as the matters under their respective responsibilities require. In 2018, all directors other than Mr. van der Meer attended at least 75% of the meetings of the Board and of each committee of which they were a member. Mr. van der Meer was unable to attend meetings from May through September due to health issues. Although, the Company does not maintain a policy regarding Board members' attendance at its annual general meetings of shareholders, our Chairman attends and chairs the Company's annual general meeting each year.

The table below provides membership and meeting information for each of the Board's standing committees as of the date of this report.

Name	Audit	Compensation	Nominating & Governance	HSE&O	Finance	Executive
Jacques Aigrain			●			Chair
Lincoln Benet			●		Chair	●
Jagjeet Bindra	●			Chair		●
Robin Buchanan		●	●			
Steve Cooper				●		
Nance Dicciani		Chair			●	●
Claire Farley		●	Chair			●
Bella Goren	●	●				
Michael Hanley	Chair			●		●
Bob Patel						
Bruce Smith	●				●	
Rudy van der Meer			●	●		
2018 Meetings	7	3	3	4	9	1

(1) The Board, Compensation Committee, Finance Committee, HSE&O Committee, and Nominating and Governance Committee each also met in person in September 2018 for an informal information session and held informal calls throughout the year.
(2) The Executive Committee also held informal calls throughout the year and between meetings to discuss coordination among the Board and its committees.

Each of our committees has a written charter, approved by the Board. The charters can be found on our website at www.lyondellbasell.com.

Audit Committee

The Audit Committee is responsible for overseeing all matters relating to our financial statements and reporting; internal audit function and independent auditors; and our compliance function. Listed below are the general responsibilities of the Audit Committee.

- *Independent Auditor*—Engage external auditor and approve compensation; review independence and establish policies relating to the hiring of auditor employees; and pre-approve audit services;
- *Internal Audit*—Review plans, staffing and activities of the internal audit function and its effectiveness;
- *Financial Statements*—Review financial statements and earnings releases; discuss and review accounting policies and practices and external auditor reviews; and discuss and review the effectiveness of internal controls; and
- *Compliance*—Review plans, staffing and function of the Company's compliance function; establish and review procedures for complaints, including anonymous complaints regarding accounting, controls and auditing; and review the Company's Code of Conduct and system for monitoring compliance therewith.

Our Board has determined that all Audit Committee members are independent under the NYSE listing standards, our categorical standards, and the heightened independence requirements applicable to audit committee members under the rules of the U.S. Securities and Exchange Commission ("SEC"). Our Board has also determined that all Audit Committee members are financially literate in accordance with the NYSE listing standards and that Mr. Smith, Mr. Hanley, and Ms. Goren qualify as audit committee financial experts under SEC rules.

Compensation Committee

The Compensation Committee is responsible for overseeing our executive compensation programs and developing the Company's compensation philosophy.

In fulfilling its responsibility for the oversight of compensation matters, the Compensation Committee may delegate authority for day-to-day administration and interpretation of the Company's plans to Company employees, including selection of participants, determination of award levels within plan parameters, and approval of award documents. However, the Compensation Committee may not delegate authority under those plans for matters affecting the compensation and benefits of the Company's executive officers.

The Compensation Committee's responsibilities include the following:

- *Executive Compensation*—Approve the compensation and benefits of executive officers; review objectives of executive compensation to ensure consistency with corporate objectives; review and approve goals and objectives of CEO compensation and evaluate CEO performance; and make recommendations to the Board regarding executive officers' compensation; and

- *Company Compensation Benefits*—Review the Company's compensation philosophy, programs and practices; review and approve pension and benefit arrangements as well as funding of pension and benefit plans; and make recommendations to the Board on these subjects.

Our Board has determined that all Compensation Committee members are independent under the NYSE listing standards, our categorical standards and independence requirements applicable to compensation committee members under NYSE rules.

Compensation Committee Interlocks and Insider Participation—No member of the Compensation Committee serves or has served as an officer or employee of the Company or any of our subsidiaries and, during 2018, no executive officer served on the compensation committee or board of any entity that employed any member of our Compensation Committee or Board.

Nominating & Governance Committee

The Nominating and Governance Committee is primarily responsible for identifying nominees for election to the Board and overseeing matters regarding corporate governance. To fulfill those duties, the Nominating and Governance Committee has the responsibilities summarized below:

- *Administrative*—Coordinate evaluations by committees and the full Board;

- *Directors and Director Nominees*—Identify and recommend candidates for membership on the Board and recommend committee memberships;

- *Director Compensation*—Evaluate and recommend director compensation; and

- *Corporate Governance*—Review the Company's governance profile and make necessary recommendations; review and propose modifications to the Company's governance documents and policies; and review and comment on shareholder proposals.

Our Board has determined that all Nominating & Governance Committee members are independent under the NYSE listing standards, our categorical standards and independence requirements applicable to compensation committee members under NYSE rules.

Health, Safety, Environmental & Operations Committee

The Health, Safety, Environmental & Operations ("HSE&O") Committee assists the Board in its oversight responsibilities by assessing the effectiveness of health, safety, and environmental programs and initiatives that support Company policies. The HSE&O Committee also reviews the Company's material technologies and the risks relating to its technology portfolio, the physical security of the Company's assets, and the Company's performance in executing large capital projects and turnarounds.

The specific responsibilities of the HSE&O Committee are summarized below:

- *Administrative*—Review the status of the Company's health, safety and environmental policies and performance, including processes to ensure compliance with applicable laws and regulations;

- *HSE Performance*—Review and monitor the Company's health, safety and environmental performance statistics, provide oversight of the programs, initiatives and activities in the areas of technology and sustainability; review with management environment, health, safety, product stewardship and other sustainability issues that can have a material impact on the Company; and review the status of related policies, programs and practices;

- *Audit*—Review and approve the scope of the health, safety and environmental audit program and regularly monitor program results; review and approve the annual budget for the health, safety and environmental audit program; and

- *Operational Performance*—Assess the Company's operational performance; review the scope of the Company's operational excellence auditor program and monitor program results; and review and monitor the Company's progress on and results for major capital projects.

Finance Committee

The Finance Committee is responsible for monitoring and assessing such matters as the Company's capital structure and allocation, debt portfolio, and derivative strategies. In fulfilling its duties, the Finance Committee has the following responsibilities:

- *Strategy*—Review analyses and provide guidance and advice regarding acquisitions and divestments and discuss and review the Company's tax strategies, planning and related structures;

- *Capital*—Review the Company's capital structure and capital allocation, including organic or inorganic investments, review and discuss the dividend policy; and review and discuss share repurchase activities and plans; and

- *Securities and Financing*—Review and discuss the Company's debt portfolio, credit facilities, compliance with financial covenants; review and discuss the commodity, interest rate or currency derivative strategies; and review and discuss the Company's securities offerings.

Executive Committee

The Executive Committee consists of the chairs of each of the other Board committees. The role of the Executive Committee is to facilitate and improve communication and coordination among the Board and its committees. It does so by, among other things, collaborating on agenda setting and discussing ad-hoc issues.

2.6.1 Evaluation of the Board of Directors and its Individual Members

Each year the Board and its committees evaluate their own effectiveness by participating in a robust self-assessment process. The Board members respond to survey questions intended to solicit information to be used to improve effectiveness of the Board and its committees. The key areas covered in the self-evaluations include membership; responsibilities; functionality; meetings; strategy; senior management (including succession planning); focus on performance; ensuring financial robustness; building corporate reputation; and matching risk with return. The feedback from the self-evaluation process is discussed during Board and committee meetings in executive sessions. Each committee also considers whether it is functioning in compliance with its charter and keeping the Board adequately informed. Committees also review their member skill sets and leadership.

In 2017, the Nominating and Governance Committee engaged a consultant to facilitate the evaluation process and solicit feedback on Board, committee, and individual performance. Beginning in late 2017 and continuing into early 2018, the consultant met with each member of the Board individually and reported to the Nominating and Governance Committee and the Board regarding the feedback provided and key takeaways. In 2018, the Board approved continuing robust self-assessment through survey.

2.6.2 Compensation of the Board of Directors and Prior Management Board

Since its incorporation in 2010, the Company was managed under a dual board structure, consisting of a Supervisory Board and a Management Board. Members of the Supervisory Board were non-executives and members of the Management Board were executive officers of the Company. Beginning on 1 June 2018, the Company transitioned to a unitary board structure, approved by shareholders, and is managed by the Board of Directors.

Non-Executive Members of the Board

The non-executive directors receive both equity and cash compensation for their service on the Board and its committees. The directors' compensation is designed to provide a competitive package that will enable the Company to attract and retain highly skilled individuals with relevant experience. The equity awards granted to Board members are restricted stock units ("RSUs"). The equity grants are provided as a means to align the interests of our directors with those of shareholders, and to put a portion of their compensation at risk to the extent the Company's market value declines. Additionally, the granting of equity compensation to directors generally is considered a best practice for U.S. companies, and all of the Company's compensation peer groups offer equity compensation to their directors. The Company believes paying directors a portion of their compensation in equity is needed to remain competitive and to attract and retain the best individuals.

The Board also believes that long-term ownership of shares is a best practice for its members. Therefore, the Company maintains Director Share Ownership Guidelines. These guidelines prohibit directors from selling shares they receive upon vesting of their equity unless they hold a number of shares that are valued at no less than six times their annual cash retainer. Restricting sales of shares in this manner ensures that our directors are able to diversify their holdings if necessary for their individual circumstances but also hold substantial amounts of our shares during their service on our Board.

The non-executive Board compensation program is set forth below. Our Articles of Association currently provide that the Board may set its own compensation, as long as the aggregate compensation paid to any individual member does not exceed $2 million in any single year.

Annual Retainer	
Cash	$115,000 ($325,000 for Board Chair)
RSUs	Valued at $170,000 ($325,000 for Board Chair)
Committee Retainer	
Members	$10,000 ($15,000 for Audit Committee)
Chairs	$20,000 ($27,500 for Audit and Compensation Chairs)

In addition to the retainers shown above, recognizing the time and effort international travel requires, we pay members of the Board $5,000 for each intercontinental trip taken in performing their board service.

Executive Director and the Prior Management Board

The compensation that was paid to our executive director, Mr. Patel, and members of the Management Board, during 2018 was based on their duties as executives of the Company. Management Board members did not receive additional compensation for serving on the Management Board.

Our executive compensation program is designed to:

- Take into account the realities of a cyclical, commodity industry;
- Align the interests of management with those of our shareholders;
- Encourage both short- and long-term results;
- Attract, retain, and incentivize the highest caliber team possible;
- Provide the ability to pay high achievers above-market median pay based on individual performance, potential, and impact to the Company's results; and
- Recognize and maintain the Company's market-leading position in HSE performance, costs, and business performance.

Our compensation program is structured to incorporate the following compensation components:

Base Salary: Base salaries provide executives with a regular fixed income in recognition for their job responsibilities. Executives' base salaries are determined when they are hired or promoted into their positions and is reviewed annually. The amounts of their salaries are determined on a number of factors, including market based data, the individual's work experience and time in role, the complexity and scope of responsibilities, and internal pay equity among the Company executives.

Annual Bonus: Annual bonus opportunities are determined as a percentage of base salary. The annual bonuses are meant to incentivize our executives and align their compensation with the achievement of the Company's annual priorities. Based on Company performance, executives will earn from 0-200% of the target bonus amount. The bonuses are also designed to reflect individual contribution and performance. Each executive, except for our Chief Executive Officer, receives an individual modifier for performance during the year, ranging from 0-1.5. Our CEO's performance directly affects and is therefore directly tied to Company performance. The earned percentage of the target is multiplied by this modifier, which can result in an actual payout from 0-300% of the target bonus amount.

Long-Term Incentives: Long-term incentive awards are meant to encourage the achievement of increased value over the longer term and more closely align the interests of our executives with those of shareholders. The aggregate target value of long-term incentives awarded to each executive is a percentage of base salary. The long-term incentive awards we grant include the following:

- **Performance Share Units ("PSUs")**—Vest over a three-year performance period and are converted to shares upon vesting. Awards can vest from 0-200% of target, depending on the Company's performance and the ultimate value received by executives is dependent on the Company's share price when the award vests. Performance for the PSUs granted in 2018 will be based solely on relative total shareholder return (TSR). PSUs accrue dividend equivalents during the performance period in the form of additional units.
- **Restricted Stock Unit Awards ("RSUs")**—Vest in full after three years and receive one share for each unit at vesting. The ultimate value received by executives is dependent on the Company's share price when the award vests. RSUs receive cash dividend equivalents at the same time and in the same amount as dividends paid to shareholders.
- **Stock Options**—Vest ratably over a three-year period and expire 10 years after the date of the grant. The exercise price is the fair market value on the date of grant.

Perquisites and Other Benefits: Our executives receive the same benefits generally provided to all other employees, which include vacation allowances, Company matching under our 401(k) plan, Company contributions to our defined benefit pension plan, and health and welfare benefits. The perquisites received by our executives that are not offered to all employees include:

- Annual executive physical—the Company provides annual physical exams to executives.
- Financial, tax, and estate planning—the Company will reimburse up to $15,000 of expenses.
- Matching under the U.S. Deferral Plan—the Company makes contributions to the U.S. Deferral Plan for amounts that exceed the IRS limits under our 401(k) plan and our defined benefit pension plan. The value of the matching contributions is 11% for compensation in excess of the IRS limit.

From time to time, the Company provides other benefits to our executives that are intended for business purposes, including tax equalization payments and the payment of business club memberships or dues. The tax equalization payments are designed to make executives whole if they incur income tax in jurisdictions other than their country and/or state of residence. For example, executives may travel to other jurisdictions on Company business and may be taxed on days worked in those jurisdictions. If, and only to the extent, those additional taxes cannot otherwise be offset against the executive's regular income tax liability (such as in the form of credits), the Company will reimburse the executive in an amount sufficient to make the tax liability equal to the full income tax for the executive's jurisdiction of residence only.

Annually, the Compensation Committee reviews the total target direct compensation for each of our executive officers. This includes base salary, target bonus opportunity, and the grant date value of long-term incentive awards. The Compensation Committee then sets each of the executives' compensation targets for the current year. This generally involves establishing an annual bonus target and the value of long-term incentive awards. Regular salary adjustments, if any, normally become effective on April 1 of the year. Mr. Patel's 2018 salary increase was made effective from 1 January 2018 in accordance with his employment agreement.

The Compensation Committee reviews publicly available financial and compensation information reported by our peer group companies and general survey data. The Compensation Committee also obtains advice and information from a third party independent compensation consultant. The Compensation Committee reviews this data and strives to set each executive's compensation near the median compensation levels of our peer group companies, with consideration given to the relative market capitalization and complexity of those organizations.

Pursuant to the rules established by the SEC, we were required to undertake an analysis of the ratio of the compensation paid to our Chief Executive Officer to the ratio of the median of the total annual compensation of all employees in 2018:

- The annual total compensation of the global median employee of our company (other than Mr. Patel, our Chief Executive Officer), was $114,759;
- The annual total compensation of Mr. Patel, our Chief Executive Officer, was $18,206,796; and
- Based on this information, the ratio of the annual total compensation of our Chief Executive Officer to the annual total compensation of the global median employee is 159 to 1.

We identified the global median employee for fiscal year 2017 and, in accordance with SEC rules, have used the same median employee for calculation of the pay ratio for fiscal 2018. In determining that there has been no change in the Company's employee population or compensation arrangements that would result in a significant change to the Company's pay ratio disclosure, and that use of the same global median employee is therefore appropriate and permitted, we excluded employees who became Company employees as part of the acquisition of A. Schulman in fiscal 2018, estimated at approximately 5,250 as of December 31, 2018.

We identified the global median employee by examining the 2017 total compensation for all regular full- and part-time employees who were actively employed by the Company on December 31, 2017 and students and interns who were hired for partial periods during 2017. For these employees, we calculated annual compensation using the following methodology and guidelines:

- To find the annual total compensation of all of our employees (other than our Chief Executive Officer), we considered all gross and net components of compensation (including short-term and long-term incentives) received by each employee and documented in the year-end payroll records for 2017.
- Compensation for full- and part-time employees hired during 2017 and still active as of December 31, 2017 was annualized based on the number of pay periods worked. Compensation for all students and interns hired for partial periods during 2017 was not annualized.
- Annual compensation for expatriate employees and employees involved in permanent cross-border transfers during 2017 was calculated using all relevant country payroll records.

After identifying the global median employee, we calculated annual total compensation for the selected employee in fiscal 2018 using the same methodology required for named executive officers under applicable SEC rules.

Information on the compensation paid to each member of the prior Management Board for 2018 performance can be found in Note 10 to the Consolidated Financial Statements.

2.7 Corporate Governance and Risk Management

2.7.1 Corporate Governance Statement

We monitor and assess applicable Dutch, U.S., and other relevant corporate governance codes, rules, and regulations. We are subject to the Dutch Corporate Governance Code (the "Code"), as we are a listed company with its statutory seat in the Netherlands. As a NYSE listed company, we also are required to comply with the U.S. Sarbanes-Oxley Act of 2002, as well as NYSE listing rules, and the rules and regulations promulgated by the SEC. As an overseas company, with executive offices in the United Kingdom, we are also required to comply with applicable requirements of U.K. company law, including the Companies Act 2006.

Our corporate governance structure is based on the requirements of the Dutch Civil Code, the company's Articles of Association and the rules and regulations applicable to companies listed on the NYSE, complemented by several internal procedures. These procedures include a risk management and control system, as well as a system of assurance of compliance with laws and regulations.

For the full text of the Code, please refer to the website http://www.commissiecorporategovernance.nl/. For the full text of the U.S. Sarbanes-Oxley Act of 2002, as well as NYSE listing rules, and the rules and regulations promulgated by the SEC, see www.sec.gov/about/laws/soa2002.pdf, http://nyse.com/, and www.sec.gov/about.shtml respectively.

The Code contains principles and best practices for Dutch companies with listed shares. We agree with both the general approach and the vast majority of its principles and best practice provisions. Any deviations from the Code are explained, in accordance with the Code's "comply or explain" principle.

Any material changes in our corporate governance structure and/or our compliance with the Code will be discussed at LyondellBasell's 2019 annual general meeting of shareholders as a separate agenda item. The Board is of the opinion that the company's corporate governance structure, as described here, is the most appropriate for LyondellBasell. With the exception of those aspects of our governance structure which can only be amended with the approval of shareholders, the Board may make adjustments to the way the Code is applied, if this is considered to be in the interest of the Company. If adjustments are made, they will be published and reported in the annual report for the relevant year.

2.7.2 Prior Management Board

Prior to June 2018, we had a dual board structure, a common structure for Dutch companies. Under the dual board structure, there was a Supervisory Board and a Management Board. Supervisory Board members were all non-executives and Management Board members were executives of the Company. The following individuals served on the Management Board until 1 June 2018:

- Bhavesh (Bob) Patel, CEO and Chairman of the Management Board;
- Thomas Aebischer, Executive Vice President and Chief Financial Officer ("CFO");
- Daniel Coombs, Executive Vice President - Global Manufacturing, Projects and Refining;
- James Guilfoyle, Executive Vice President - Advanced Polymer Solutions and Global Supply Chain; and
- Jeffrey Kaplan, Executive Vice President and Chief Legal Officer.

2.7.3 Code of Conduct

Part of LyondellBasell's risk management and control system is the Company's Code of Conduct. The Code of Conduct contains rules and guidelines on integrity subjects, issues and the Company's values. These values include respecting fellow employees, working safely, exercising care when using the Company's assets, avoiding conflicts of interest, complying with anti-corruption laws, preventing money laundering, and preventing insider trading and tipping.

LyondellBasell has established a complaint procedure, which provides guidance for employees to report, anonymously if desired, alleged violations of the Code of Conduct or other Company policies. Alleged violations of the Code of Conduct can be reported by LyondellBasell employees as well as third parties by calling a telephone hotline or submitting information via the internet.

The Code of Conduct, including complaints received based on the complaint procedure, are regularly discussed in the Audit Committee.

The Code of Conduct and information on how to submit complaints are posted in the Corporate Governance section of the Investor Relations section of our website at www.lyondellbasell.com.

Compliance with the Code of Conduct is monitored on a regular basis, and mandatory training courses on our Code of Conduct are conducted regularly by all employees worldwide.

2.7.4 Conflicts of Interest

The Company has a Related Party Transaction Policy, described below, that requires Audit Committee approval of certain transactions between the Company and related parties. During 2018, no transactions occurred that could have given the appearance of conflicts of interests or that effectively involved conflicts of interests. Best practice provisions 2.7.3 through 2.7.5 of the Dutch Corporate Governance Code have been complied with.

2.7.5 Related Party Transactions

We have adopted a Related Party Transaction Approval Policy, which requires the disinterested members of the Audit Committee to review and approve certain transactions that we may enter into with related parties, including members of the Board, executive officers, and certain shareholders. The policy applies to any transaction:

- In the ordinary course of business with an aggregate value of $25 million or more,
- Not in the ordinary course of business, regardless of value, or
- With a value of $120,000 or more and in which an executive officer or non-executive director has a direct or indirect material interest.

The disinterested members of the Audit Committee determine the fairness of any related party transaction to the Company by considering whether the terms of the transaction are no less favorable than those which could be obtained from non-related parties. The following is a description of related party transactions in existence since the beginning of fiscal year 2018.

Access Industries

In 2010, we entered into certain agreements with affiliates of Access Industries, including a registration rights agreement that obligates us to register and bear the costs for the resale of equity securities owned by Access Industries or its affiliates, and a nomination agreement. Pursuant to the nomination agreement, as amended and restated in June 2018, Access Industries has the right to nominate individuals for appointment to the Board if certain ownership thresholds are met. Access Industries currently owns more than 18% of our outstanding shares and nominated Messrs. Benet, Buchanan and Cooper pursuant to the agreement. Nomination rights continue for so long as Access Industries owns at least 5% of our outstanding shares. The Company entered into these agreements with Access Industries before it became publicly traded and the Related Party Transaction Policy was adopted. Subsequent amendments to the nomination agreement have been approved by our disinterested Board members.

Anadarko Petroleum Corporation

On an ongoing basis and in the ordinary course of business, the Company makes spot purchases of natural gas and natural gas liquids, which are raw materials used to manufacture the Company's products, from Anadarko Petroleum Corporation. Robert G. Gwin, the previous Chairman of our Board, is President of Anadarko Petroleum, and Claire Farley, a current director, is a member of Anadarko's board of directors. In July 2014, the Audit Committee approved the Company making spot purchases from Anadarko as it deems appropriate, noting that those transactions were on terms no less favorable than those which could be obtained from non-related parties. The Company purchased approximately $74 million of natural gas and natural gas liquids from a subsidiary of Anadarko Petroleum in 2018. The Nominating and Governance Committee and Board considered these purchases in connection with the determinations that Mr. Gwin and Ms. Farley are independent. The Company does not believe that Mr. Gwin's or Ms. Farley's position at Anadarko gives rise to a direct or indirect material interest in the transactions.

Calpine Corporation

In March 2018, a group of investors including Access Industries completed the acquisition of Calpine Corporation, the owner and operator of power plants across the United States and Canada and a supplier of power and steam to the Company's Houston Refinery. Once the acquisition was completed, the Audit Committee approved the continuation of the Company's contractual relationship with Calpine on existing terms. Notably, the terms of the contracts were negotiated before the relationship with Calpine arose and were determined to be fair to the Company and more advantageous than those offered by other parties. In October 2018, the Audit Committee approved the renegotiation and extension of the Company's contracts with Calpine through 2036, on substantially the same terms and conditions. The Company purchased approximately $76 million of power, steam, and water from Calpine and sold approximately $15 million of excess gas and raw water to Calpine in 2018.

Indemnification

We indemnify members of our Board to the fullest extent permitted by law so that they will be free from undue concern about personal liability in connection with their service to the Company. Our Articles of Association establish this indemnification right, and we have also entered into agreements with each of our non-executive Board members and certain of our executive officers contractually obligating us to indemnify them.

2.7.6 Dutch Corporate Governance Code

As a Dutch company, our governance practices are governed by the Code, a copy of which is available at http://www.commissiecorporategovernance.nl. The Code contains a number of principles and best practices. The Code, in contrast to U.S. laws, rules and regulations, contains an "comply or explain" principle, offering the possibility to deviate from the Corporate Governance Code and still be in compliance as long as any such deviations are explained. In certain cases, we have not applied the Code's practices and provisions and in those instances explain the non-application.

We conduct our operations in accordance with internationally accepted principles of good governance and best practice, while ensuring compliance with the corporate governance requirements applicable in the countries in which we operate. There is considerable overlap between the requirements we must meet under U.S. rules and regulations and the provisions of the Code and we comply with almost all of the provisions of the Code. For clarity purposes, we have listed below deviations from the Code and our reasons for deviating.

2.1.5

Diversity

The Company's Board currently consists of twelve directors, three of whom are female. The Board believes that diversity, including with respect to gender, nationality, experience and background is important and beneficial to a well-functioning board. Subject to the availability of suitable candidates at the time of appointments, the Company aims to reach a well-balanced mix of men and women on the Board.

The Company does not yet have a diversity policy. However, the Board and its Nominating & Governance Committee evaluates the Company's diversity initiatives and efforts to recruit and retain diverse employees and directors and specifically considers diversity of views and experiences pursuant to its corporate governance guidelines available at https://www.lyondellbasell.com/en/investors/corporate-governance/.

2.1.7

Our Board currently consists of twelve directors, three of whom (Messrs. Benet, Buchanan and Cooper) have been nominated by a shareholder pursuant to a nomination agreement. Under the provisions of the Code, but not under the NYSE listing standards, those three directors are not considered independent as a result of their affiliation with the shareholder that nominated them, which owns more than 10% of our shares. Under the Code, for each shareholder holding 10% or more of the Company's shares at most one director may be on the Board. This deviation from the Code is a result of our obligation under the nomination agreement with an affiliate of Access Industries to nominate individuals to our Board. The Company entered into the nomination agreement before it became publicly traded; however, subsequent amendments to the nomination agreement have been approved by our disinterested Board members. The Board believes that each of its directors brings with him a level of skill, experience and qualifications that benefit the workings of the Board and therefore the Company's stakeholders generally.

2.2.2

Members of the Board are appointed for one-year terms; however, there is no limit on the number of terms a Board member may serve.

Currently, the Board does not believe there is a driving interest in limiting members to the "maximum of two four-year terms plus two two-year terms"provision of the Code. In 2018, Messrs. Cooper, Smith and van der Meer were nominated and elected to serve on the Board, each having served as director for more than eight years. The Board believes that a depth of history and knowledge of the Company, which can be developed through long-term service, continues to be key to an effective oversight of the Company, and that a mandatory retirement age and annual evaluation process for renominations are currently more effective means of ensuring Board refreshment and renewal, while also allowing for continuity of service. The Board revisits the provisions in its governing documents on at least an annual basis and may determine that limitations of the number of terms for Board members is appropriate. Notwithstanding any such determinations, under the nomination rights described above, as long as certain shareholders maintain their share ownership at required levels, they will be able to nominate individuals of their choosing; the result of which may be for individuals nominated by them to serve for longer than any Board-determined terms.

3.1.2.v

The number of options and restricted stock units that we grant to our executives are determined based on an overall target of equity based compensation, calculated as a percentage of base salary, rather than on the achievement of specified targets as is considered best practice under the Code. The targeted values of options and restricted stock units granted are determined based on peer group analyses to ensure competitive compensation for attracting and retaining our executives.

3.1.2.vi

In contrast to best practices provision 3.1.2.vi under the Code, we do not require all shares granted as compensation to be held for five years or until the end of employment. Instead, our Compensation Committee implemented share ownership requirements that restrict selling of shares by executives unless certain levels of equity are held. We believe that the share ownership guidelines appropriately ensure executives retain substanital equity to make certain their interests are aligned with shareholders while also allowing flexibility for diversification of personal wealth.

3.1.2.vii

The stock options we grant to our executive officers are exercisable before the third anniversary of the date of grant, which is contrary to best practices provision 3.1.2.ii in the Code. We believe our vesting schedules are in line with the practices of our peer group used for executive compensation purposes and necessary to attract and retain the best people.

3.2.1

Mr. Patel, our CEO and a director, is party to an employment agreement that provides for severance payments that are in excess of one year's base salary. Executives other than Mr. Patel are participants in our Executive Severance Plan. The severance plan provides for severance payments in an amount equal to the executive's base salary plus target annual bonus (or, in the case of Mr. Patel. 1.5 times such amount (or 2.5 times such amount in the event of certain termination circumstances within one year of a change in control)). We believe that these severance arrangements are consistent with market practices and our peer group severance arrangements and are necessary to attract or retain qualified leaders.

3.3.2 and 3.3.3

Members of the Board have been granted restricted stock units as a portion of their annual remuneration. The restricted stock units entitle the recipient to an equal number of the Company's shares after certain time-based vesting requirements have been met. Additionally, Board members are allowed to receive shares of our common stock in lieu of their cash retainers. This is a deviation from the Code, which states that board members shall not be granted shares and/or rights to shares by remuneration.

The Company believes that granting rights to acquire shares aligns the Board members' interests with those of shareholders, thereby increasing the incentives to make decisions that create long-term value for the Company.

Additionally, as part of their review of director compensation, the Nominating & Governance Committee and the Board consider, among other factors, the practices at a comparative group of public companies, based on market comparison studies prepared by an outside independent consultant. All of the companies in the comparative group offer some form of equity compensation. For that reason, among others, the Company believes that equity awards are reflective of the market and are necessary to attract and retain highly skilled individuals with relevant experience and to reflect the time and talent required to serve on the board of directors of a complex, multinational corporation.

2.7.7 Shareholders and General Meeting of Shareholders

Powers

A general meeting of shareholders will be held at least once a year in the Netherlands. In this meeting, the following items are expected to be discussed and/or approved:

- The written report of the Board containing the course of affairs in LyondellBasell and the conduct of the management during the past financial year as disclosed in this Annual Report;
- The adoption of the annual accounts;
- The Company's reserves and dividend policy and justification thereof;
- The discharge of the members of the Board (including the prior Management Board) in respect of their duties during the previous financial year;
- Each material change in the Company's corporate governance structure (if any occurred); and
- Any other item the Board determines to place on the agenda.

The approval of the general meeting of shareholders and the Board is also required for resolutions regarding a significant change in the identity or character of LyondellBasell or its business, including in any event:

- A transfer of the business or virtually all of the business to a third party;
- Entry into or termination of long-term cooperation by the Company or a subsidiary with another legal entity or partnership or as a general partner with full liability in a limited or general partnership if such cooperation or the termination thereof is of far-reaching significance for the Company; and
- An acquisition or disposal by the Company or a subsidiary of a participation in the capital of another company, the value of which equals at least one third of the amount of the assets according to the consolidated statement of financial position with explanatory notes attached to the Annual Accounts as most recently adopted.

Proposals placed on the agenda by the Board, or at the request of shareholders, provided that they have submitted the proposals in accordance with the provisions of LyondellBasell's Articles of Association, will be discussed and decided. Shareholders are entitled to request items for the annual general meeting agenda no less than sixty days before the meeting, and provided that they represent at least 1 percent of LyondellBasell's outstanding share capital.

The Board may convene extraordinary general meetings as often as it deems necessary. Such meetings must be held if one or more shareholders and others entitled to attend the meetings jointly representing at least one-tenth of the issued share capital make a written request to that effect to the Board, specifying in detail the items to be discussed.

Information to the Shareholders

To ensure fair disclosure, LyondellBasell distributes Company information that may influence the share price to shareholders and other parties in the financial markets simultaneously and through means that are public to all interested parties.

When LyondellBasell's annual and quarterly results are published by means of a press release, interested parties, including shareholders, can participate through conference calls and view the presentation of the results on LyondellBasell's website. The schedule for communicating the annual financial results is in general published through a press release and is posted on LyondellBasell's website.

It is LyondellBasell's policy to post the presentations given to analysts and investors at investor conferences on its website. Information regarding presentations to investors and analysts and conference calls are announced in advance on LyondellBasell's website. Meetings and discussions with investors and analysts shall, in principle, not take place shortly before publication of regular financial information. LyondellBasell does not assess, comment upon, or correct analysts' reports and valuations in advance, other than to comment on factual errors. LyondellBasell does not pay any fees to parties carrying out research for analysts' reports, or for the production or publication of analysts' reports, and takes no responsibility for the content of such reports.

At the annual general meetings of shareholders, the shareholders will be provided with all requested information, unless this is contrary to an overriding interest of the Company. If this should be the case, the Board will provide its reasons for not providing the requested information.

Furthermore, the Investor Relations section on LyondellBasell's website provides links to information about LyondellBasell published or filed by LyondellBasell in accordance with applicable rules and regulations.

Relationship with Institutional Investors

LyondellBasell finds it important that its institutional investors participate in LyondellBasell's general meetings of shareholders. The Company believes that providing internet proxy voting are measures that should achieve high levels of participation at the meeting.

2.7.8 Takeover Directive; Anti-Takeover Provisions and Control

General

The EU Takeover Directive requires that certain listed companies must publish information providing insight into defensive structures and mechanisms which they apply. The relevant provision has been implemented into Dutch law by means of a decree of 5 April 2006. Pursuant to this decree, Dutch companies whose securities have been admitted to trading on an EU regulated market have to include information in their annual report which could be of importance for persons who are considering taking an interest in the company. The Company's shares are admitted to trading on the NYSE and not on any EU regulated markets.

According to provision 4.2.6 of the Code, we are required to provide a survey of our actual or potential anti-takeover measures, and to indicate in what circumstances it is expected that they may be used.

Accordingly, we have set out below a number of provisions in the Articles of Association that in a Dutch context technically are not necessarily considered to be anti-takeover measures, but which could restrict the ability of a controlling shareholder to effectively exercise control over the Company:

- As per Article 12.3 of the Articles of Association, and subject to article 12.4, the appointment of a member of the Board shall take place by way of a binding nomination prepared by the Board. The general meeting of shareholders may render such nomination non-binding by means of a resolution adopted by at least two-thirds (2/3) of the valid votes cast, such two-third (2/3) majority representing more than one-half (1/2) of the issued capital. In case of such a vote, the general meeting of shareholders will be free in its selection and appointment of a Board member to fill the vacancy by means of a resolution adopted by at least two-thirds (2/3) of the valid votes cast, such two-third (2/3) majority representing more than one-half (1/2) of the issued capital. If the proportion of the share capital of at least one-half (1/2) as referred to in the preceding sentence is not represented at the meeting, then no new meeting may be convened without such proportion of the share capital being represented; and
- As per article 22.1 of the Articles of Association, the Articles of Association may only be amended by the General Meeting of Shareholders on the proposal of the Board.

In the event of a hostile takeover bid, in general the Board reserves the right to use all powers available to it in the interests of the Company and its affiliated enterprise, taking into consideration the relevant interests of the Company's stakeholders.

2.7.9 Risk Management

A certain degree of risk is inherent in our business (see Section 2.2, "Risk Factors," generally). Additionally, pursuing business strategies and objectives inevitably leads to taking risks. Risks can jeopardize strategies and objectives in various ways. Each type of risk we encounter is addressed in a manner and with the intensity that matches the nature and size of the risk in relation to the Company's risk appetite. The risk appetite is the total residual impact of risks that we are willing to accept in the pursuit of our objectives.

Effective risk management is a key factor for the Company realizing its business and strategic objectives. Risk areas with a low-risk appetite and thus a low acceptable residual risk require strong risk management and strong internal controls. The risk areas where we have a low-risk appetite include those relating to the safety of our employees, our assets, the environment and the communities in which we operate and those relating to legal and regulatory compliance.

The management of the Company and the Board are responsible for ensuring that LyondellBasell complies with applicable legislation and regulations. They are also responsible for the financing of LyondellBasell and for managing the internal and external risks related to its business activities.

The establishment of our internal risk management and control system is based on the identification of external and internal risk factors that could influence the operational and financial objectives of the Company, and contains a system of monitoring, reporting, and operational reviews.

To help identify risks, LyondellBasell uses a formal risk management approach, consisting of a set of risks definitions which are discussed amongst senior management of LyondellBasell at least annually, as described below. Based on this risk assessment, actions are initiated to further enhance the Company's risk mitigation.

The disclosure of the risks that potentially could have a significant impact on the Company's strategy execution, operations or financial position is derived in part from LyondellBasell's internal risk assessment, comprising elements of the risk assessment model as mentioned in the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") report.

The Company publishes two annual reports in respect of the financial year ("2018 Annual Reports"): (i) a Statutory Annual Report in accordance with Dutch legal requirements in accordance with International Financial Reporting Standards ("IFRS") and International Financial Reporting Interpretation Committee ("IFRIC") interpretations as adopted by the European Union and (ii) an Annual Report on Form 10-K in accordance with U.S. securities laws, based on the United States of America Generally Accepted Accounting Principles ("U.S. GAAP"). Both 2018 Annual Reports include risk factors that are specific to the petrochemical industry, LyondellBasell and ownership of its shares. LyondellBasell also provides sensitivity analyses by providing:

- A narrative explanation of its financial statements;
- The context within which financial information should be analyzed; and
- Information about the quality, and potential variability, of LyondellBasell's earnings and cash flow.

In the "Statements of the Board of Directors" (included in Section 2.7.12), the Board addresses the Company's internal risk management and control systems.

We are required to conduct an evaluation, under the supervision and with the participation of our CEO and CFO, of the effectiveness of the Company's internal control over financial reporting and, based on that evaluation, conclude whether the Company's internal control over financial reporting was effective as of 31 December 2018, providing reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP. PricewaterhouseCoopers LLP, the Company's independent registered accounting firm under U.S. securities rules and regulations also confirms the effectiveness of the Company's internal control over financial reporting in its Consent of Independent Registered Public Accounting Firm as included in our 2018 Annual Report on Form 10-K for the year ended 31 December 2018.

For the Statutory Annual Report, the Company follows the requirements of Dutch law and regulations, including preparation of the consolidated financial statements in accordance with IFRS and IFRIC interpretations as adopted by the European Union. For the Annual Report on Form 10-K, the Company applies the requirements of the U.S. Securities and Exchange Act of 1934, and prepares the financial statements included therein in accordance with U.S. GAAP.

LyondellBasell currently has a Disclosure Committee, consisting of various members of management from different business and functional areas within the Company. The Disclosure Committee reports to and assists the CEO and CFO in the maintenance, review and evaluation of disclosure controls and procedures. The Disclosure Committee's main responsibilities are to ensure compliance with applicable disclosure requirements arising under United States and applicable stock exchange rules. The Company's CEO and CFO receive reports from the Chairman of the Disclosure Committee on any material topics discussed in the meetings.

Board's Role in Risk Oversight

While the Company's CEO is responsible for assessing and managing the Company's day-to-day risks and related control systems, the Board has broad oversight of the Company's risk management and risk profile. In this oversight role, the Board is responsible for satisfying itself that the risk management processes designed and implemented by management are functioning and that necessary steps are taken to foster a culture of risk-adjusted decision-making throughout the organization. The Company believes that this division of responsibilities has been effective in achieving sound risk management, and that the Board's involvement has ensured effective oversight.

The primary means by which our Board oversees our risk management structures and policies is through its regular communications with management. At each Board meeting, executive officers are asked to report to the Board and, when appropriate, specific committees. Additionally, other members of management and employees periodically attend meetings and present information. One purpose of these presentations is to provide direct communication between members of the Board and members of management. The presentations provide the Board with the information necessary to understand the risk profile of the Company, including information regarding the specific risk environment, exposures affecting the Company's operations and the Company's plans to address such risks. In addition to information regarding general updates to the Company's operational and financial condition, members of management report to the Board about the Company's outlook and forecasts, and any impediments to meeting those or its pre-defined strategies generally. These direct communications allow the Board to assess management's evaluation and management of the Company's day-to-day risks.

In carrying out its oversight responsibility, the Board has delegated to individual Board committees certain elements of its oversight function.

- The Audit Committee oversees of the integrity of the Company's financial statements; The qualifications, performance and independence of our independent accountants; the performance of the Company's internal audit function and compliance program; the Company's monitoring, control and reporting of significant corporate risk exposure; and our system of disclosure and internal controls.
- The Compensation Committee oversees the Company's compensation programs; evaluates whether our programs and practices create excessive risk; and determines whether any changes to those programs and practices are warranted.
- The Nominating & Governance Committee reviews the Company's corporate governance practices and develops, reviews and recommends corporate governance guidelines and policies.
- The Health, Safety, Environmental & Operations ("HSE&O") Committee reviews and monitors compliance with health, safety and environmental matters; provides oversight of the Company's technology and the execution of large capital projects and turnarounds; discusses the Company's HSE and Operational Excellence programs and safety and environmental incidents and statistics; and plans and initiatives to continuously improve health, safety, environmental and operational results.

- The Finance Committee provides oversees strategic transactions, including those that may impact our capital position; and reviews our capital structure, capital allocation, dividend policy, share repurchase programs, debt profile, and hedging strategies.

The Company has an enterprise risk management function, with a group of employees dedicated to enterprise-wide risk management activities. The CEO is responsible for overseeing these risk management programs, including assessing risk tolerances, evaluating whether such tolerances are aligned with the Company's strategic goals, and defining our overall risk profile. The CEO has delegated to an internal Risk Management Committee the authority to review and approve transactions that are in furtherance of the Company's approved strategies. In addition to the CEO, the standing members of the Risk Management Committee include the Chief Financial Officer and the Chief Legal Officer. Through a variety of policies and procedures, senior management and their reports are required to identify, monitor, mitigate, and report on risks and to submit risk management plans from each business segment.

The results of the risk management processes and updates on the material risks are reported to the Board and its committees on a regular basis. In addition, the Audit Committee is responsible for ensuring that an effective risk assessment process is in place, and reports are made to the Audit Committee in accordance with NYSE requirements.

Risk Management and Control Systems

The management of the Company and the CEO and executive director are primarily responsible for the design, implementation and operation of the Company's internal risk management and control systems. The purpose of these systems is to effectively manage the significant risks to which the Company is exposed. Such systems can never provide absolute assurance regarding achievement of corporate objectives, nor can they provide an absolute assurance that material errors, losses, fraud and the violation of laws or regulations will not occur.

To comply with our duties in the area of internal risk management and control systems, the Company has designed and implemented an enterprise risk management process.

An enterprise risk assessment is conducted annually in the first quarter incorporating the six business segments, manufacturing operations and the business support functions. In addition, group-level risks are assessed with the functions and executive leadership. The identification and assessment of enterprise risks is conducted in accordance with the LyondellBasell Enterprise Risk Management framework which is based on the COSO Enterprise Risk Management model.

Enterprise risks that are not reportable to the Board will continue to be assessed and managed at the business/functional level. Risks considered significant are those that could impair the company's ability to achieve its strategic objectives. A half-year update of the significant business risks reported during the annual enterprise risk assessment is conducted in the fourth quarter and reported to the Board for review.

The Company's significant risks, as identified in accordance with the described process, are assigned to a member of the executive leadership team, who is responsible for analyses and mitigation activities related to his assigned risks. In addition, the Audit Committee of the Board is responsible for ensuring that an effective risk assessment process is in place, and quarterly reports are made to the Audit Committee on financial and compliance risks in accordance with requirements of the NYSE.

We use various other measures to ensure compliance with our duties in the area of internal risk management and control systems, including:

- Operational review meetings of the Board with LyondellBasell's senior management on financial performance and realization of operational objectives and responses to emerging issues;
- Monthly meetings with LyondellBasell's Chief Executive Officer, Chief Financial Officer and senior finance management focusing on monthly financial figures and internal control evaluations;
- Monthly and quarterly financial reporting, mainly to LyondellBasell's senior management;
- Letters of representation that are signed by LyondellBasell's key personnel on a quarterly basis in which they confirm that for their responsible area and based upon their knowledge (i) an effective system of internal controls and procedures is maintained and (ii) the financial reports fairly present the financial position, results of operations and cash flows;
- Assessments by LyondellBasell's Disclosure Committee with respect to the timely review, disclosure, and evaluation of periodic (financial) reports;
- Discussions on process safety, product safety, environmental and security matters within the Health, Safety and Environmental & Operations Committee of the Board;
- Discussions on management letters and audit reports provided by the Company's internal and external auditors to the Audit Committee of the Board;
- Corporate policies assigning responsibility for identification and management of risks;
- LyondellBasell's Code of Conduct;

- LyondellBasell's Financial Code of Ethics applicable to the Chief Executive Officer, Chief Financial Officer and Chief Accounting Officer;
- LyondellBasell's Ethics Hotline and whistleblower procedures; and
- LyondellBasell's Compliance programs and training, which facilitate the development of controls which will aid in prevention, deterrence and detection of fraud against LyondellBasell.

2.7.10 Audit of Financial Reporting

Financial Reporting

LyondellBasell has comprehensive internal procedures in place for the preparation and publication of Annual Reports, annual accounts, quarterly figures, and all other financial information. These internal procedures are frequently discussed in the Audit Committee and the Board of Directors. The Company's Disclosure Committee assists the Company's management in overseeing LyondellBasell's disclosure activities and ensures compliance with applicable disclosure requirements arising under U.S. and Dutch law and regulatory requirements.

The Audit Committee reviews and approves the external auditor's Audit Plan for the audits planned during the financial year. The Audit Plan also includes the activities of the external auditor with respect to their reviews of the quarterly results other than the annual accounts. These reviews are based on agreed upon procedures and are approved by the Audit Committee. The external auditor regularly updates the Audit Committee on the progress of the audits and other activities.

Appointment, Role, Assessment of the Functioning of the External Auditor, and the Auditor's Fee

In accordance with Dutch law, LyondellBasell's external auditor is appointed by the general meeting of shareholders and is nominated for appointment by the Board upon advice from the Audit Committee. LyondellBasell's current external auditor is PricewaterhouseCoopers Accountants N.V. ("PwC"), and the Board, on the recommendation of the Audit Committee, is proposing shareholders appoint PwC as its auditor to audit the 2018 Dutch statutory accounts at the Annual Meeting.

The Audit Committee reports annually to the Board on the functioning of, and the developments in, the relationship with of the external auditor as required by the Dutch Corporate Governance Code.

The external auditor has functioned to the satisfaction of the Audit Committee.

Annually, the Audit Committee provides the Board with a report on the relationship with the external auditor, including the required auditor independence. To determine the external auditor's independence, the relationship between the audit services and the non-audit services provided by the external auditor is important, as well as the rotation of the responsible lead audit partner every five years. Non-audit services (including tax fees and non-audit-related fees) performed by the external auditor comprised approximately ten percent of the external auditor's services in 2018. Based on the proportion audit fees versus non-audit related fees, it was concluded and confirmed by the external auditor that the external auditor acts independently.

The external auditor will be present at the 2019 Annual Meeting to respond to questions, if any, from the shareholders about the auditor's report on the financial statements.

The Audit Committee, on behalf of the Board, approves the remuneration of the external auditor as well as the non-audit services to be performed, after consultation with the CFO. It has been agreed among the members of the Board that the Audit Committee has the most relevant insight and experience to be able to approve both items, and therefore the Board has delegated these responsibilities to the Audit Committee.

In principle the external auditor attends all meetings of the Audit Committee, unless this is deemed not necessary by the Audit Committee. The findings of the external auditor are discussed at these meetings.

The Audit Committee reports on all issues discussed with the external auditor to the Board, including the external auditor's report with regard to the audit of the annual accounts as well as the content of the annual accounts. In the audit report, the external auditor refers to the financial reporting risks and issues that were identified during the audit, internal control matters, and any other matters requiring communication under the auditing standards generally accepted in the Netherlands and in the United States.

Internal Audit Function

The internal audit function of LyondellBasell forms one of the key elements to address the topics of risk management and internal control over financial reporting as required under the Code and the Sarbanes-Oxley Act, respectively. To ensure the independence of this function, the Company's internal auditor reports to the Audit Committee. The external auditor and the

Audit Committee are involved in drawing up the work schedule and audit scope of the internal auditor. The internal auditor regularly provides updates on his findings to the Audit Committee.

2.7.11 Statements of the Board of Directors

The management of the Company is responsible for the preparation of the Annual Accounts and the Annual Report of LyondellBasell N.V. for the year ended 31 December 2018 in accordance with applicable Dutch law and International Financial Reporting Standards ("IFRS") as adopted by the European Union and with Part 9 of Book 2 of the Dutch Civil Code.

As required by Section 5:25C(2)(c) of the Dutch Financial Markets Supervision Act (‘Wet op het financieel toezicht') and on the basis of the foregoing and the explanations contained in Section 4.10 "Risk Management," the Board confirms that to the best of its knowledge:

- The LyondellBasell N.V. 2018 Annual Accounts give a true and fair view of the assets, liabilities, financial position and profit or loss of LyondellBasell N.V. and the entities included in the consolidation taken as a whole;
- The LyondellBasell N.V. 2018 Annual Report gives a true and fair view of the development and performance of LyondellBasell N.V. and the entities included in the consolidation taken as a whole as at 31 December 2018 and the state of the affairs during the financial year to which the report relates and describes the principal risks facing LyondellBasell N.V. and a discussion of the principal risks and uncertainties.

Based on the outcome of the measures described under Section 4.10, "Risk Management," and to the best of its knowledge and belief, the Board states that:

Risk Management and Control Systems, Reporting on Going-concern Basis

Based on the current state of affairs, it is justified that the financial reporting is prepared on a going concern basis, and the Annual Report disclose all material risks and uncertainties that are relevant regarding the expectation as to the continuity of LyondellBasell N.V. for the 12-month period after the date of issue of this Annual Report. The Annual Report provides sufficient insights into any important deficiencies in the effectiveness of the internal risk management and control systems that were detected during the 2018 financial year. The aforementioned systems provide reasonable assurance that the Annual Accounts do not contain any material errors.

Evaluation of Disclosure Controls and Procedures

Employees within the Company, with the participation of our Chief Executive Officer and our Chief Financial Officer have evaluated the effectiveness of our disclosure controls and procedures in ensuring that the information required to be disclosed in reports in accordance with International Financial Reporting Standards as adopted by the European Union that we file or submit to the Chamber of Commerce in The Netherlands, as amended, is recorded, processed, summarized and reported within the time periods specified in the Dutch Law, including ensuring that such information is accumulated and communicated to management as appropriate to allow timely decisions regarding required disclosure. Based on such evaluation, our CEO and CFO have concluded that such disclosure controls and procedures were effective as of 31 December 2018, the end of the period covered by this annual report.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting in our fourth fiscal quarter of 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

The establishment of LyondellBasell's internal control and risk management systems is based on the identification of external and internal risk factors that could influence the operational and financial objectives of the Company and contains a system of monitoring, reporting and operational reviews. All material risk management activities have been discussed with the Audit Committee and the Board.

Financial Statements

The Report of the Independent Auditor, PricewaterhouseCoopers Accountants N.V., is included in the 'Other Information'. The financial statements are being presented for adoption by shareholders at the 2019 Annual Meeting. The Board recommends that shareholders adopt these financial statements.

The Board of Directors,

/s/ Jacques Aigrain (Chairman)

/s/ Lincoln Benet

/s/ Jagjeet S. Bindra

/s/ Robin Buchanan

/s/ Stephen F. Cooper

/s/ Nance K. Dicciani

/s/ Claire S. Farley

/s/ Isabella D. Goren

/s/ Michael S. Hanley

/s/ Bhavesh V. Patel

/s/ Bruce A. Smith

/s/ Rudy M.J. van der Meer

London, 10 April 2019

CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED STATEMENT OF INCOME

		Year ended 31 December	
Millions of U.S. Dollars, except per share data	**Note**	**2018**	**2017**
Revenue	6	$ 39,133	$ 34,592
Cost of sales	7	32,707	27,820
Gross profit		6,426	6,772
Selling costs	7	327	263
Administrative expenses	7	847	680
Other (income) expense, net	11	(168)	(33)
Operating profit		5,420	5,862
Finance income		45	24
Finance costs	12	(436)	(363)
Share of profit of investments accounted for using the equity method	17	194	217
Profit before income tax		5,223	5,740
Income tax expense	13	(571)	(678)
Profit for the year		$ 4,652	$ 5,062
Attributable to:			
Profit/(loss) attributable to			
-Owners of the Company		$ 4,652	$ 5,064
-Non-controlling interests		—	(2)
Total		$ 4,652	$ 5,062
Earnings per share:			
-Basic	14	$ 11.95	$ 12.70
-Diluted	14	$ 11.92	$ 12.70

The notes on pages 56 to 128 are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STAMENT OF COMPREHENSIVE INCOME

Millions of U.S. Dollars	Note	Year Ended 31 December 2018	2017
Profit for the year		$ 4,652	$ 5,062
Other comprehensive income (expense), net of tax			
Items that will not be reclassified subsequently to profit or loss:			
Remeasurements of post-employment benefits obligations	28	94	104
Tax on (benefit from) re-measurements of post-employment benefits obligations	13	(26)	(47)
		68	57
Items that may be reclassified subsequently to profit or loss:			
Unrealized gains (losses) on available-for-sale securities:		—	13
Income tax (expense) benefit on available-for-sale securities:	13	—	2
		—	15
Net movement on cash flow hedges	4	55	(37)
Amount reclassed out of OCI to net income		8	—
Income tax (expense) benefit on cash flow hedges	13	(14)	13
		49	(24)
Net movement on Net investment hedge		17	—
Income tax (expense) benefit on net investment hedges	13	(4)	—
		13	—
Currency translation of foreign operations		(75)	97
Income tax (expense) benefit on currency translation of foreign operations	13	(15)	33
		(90)	130
Other comprehensive income (loss), net of tax		40	178
Total comprehensive income		$ 4,692	$ 5,240
Attributable to:			
-Owners of the company		$ 4,692	$ 5,242
-Non-Controlling interest		—	(2)
		$ 4,692	$ 5,240

The notes on pages 56 to 128 are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

ASSETS

Millions of U.S. Dollars	Note	31 December 2018	31 December 2017
Non-current assets:			
Intangible assets	15	$ 2,613	$ 963
Property, plant and equipment	16	13,402	11,710
Investments in associates and joint ventures	17	1,192	1,364
Deferred income tax assets	27	65	131
Derivative financial instruments	20	118	26
Trade and other receivables	22	194	122
Total non-current assets		17,584	14,316
Current assets:			
Inventories	21	4,468	4,215
Trade and other receivables	22	4,602	4,614
Available-for-sale financial assets	20	—	1,307
Financial assets at fair value through other comprehensive income	20	567	—
Financial assets at fair value through profit or loss	20	325	—
Derivative financial instruments	20	79	66
Income tax receivable		12	29
Cash and cash equivalents	23	415	1,579
Total current assets		10,468	11,810
Total assets		$ 28,052	$ 26,126

The notes on pages 56 to 128 are an integral part of these Consolidated Financial Statements.

EQUITY AND LIABILITIES

Millions of U.S. Dollars	**Note**	**31 December 2018**	**31 December 2017**
Equity attributable to the owners of the Company:	24		
Share capital		$ 22	$ 31
Share premium		10	10,024
Other reserves		(1,069)	(1,093)
Retained earnings		13,100	15,342
Treasury shares		(2,206)	(15,749)
		9,857	8,555
Non-controlling interests	25	23	1
Total equity		9,880	8,556
Non-current liabilities:			
Borrowings	26	7,662	8,619
Deferred income tax liability	27	2,021	1,691
Retirement benefit obligations	28	1,408	1,376
Derivative financial instruments	20	121	198
Provisions	30	169	187
Accruals and deferred income		277	181
		11,658	12,252
Current liabilities:			
Trade and other payables	29	4,442	4,145
Income tax payable		74	954
Borrowings	26	1,901	88
Derivative financial instruments	20	55	82
Provisions	30	42	49
		6,514	5,318
Total liabilities		18,172	17,570
Total equity and liabilities		$ 28,052	$ 26,126

The notes on pages 56 to 128 are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

Millions of U.S. Dollars	Note	Share Capital	Share Premium	Treasury Shares	Other Reserves	Retained Earnings	Equity attributable to the owners of the company	Non-Controlling Interest	Total Equity
Balance at 1 January 2017		$ 31	$ 10,009	$ (14,945)	$ (1,271)	$ 11,691	$ 5,515	$ 25	$ 5,540
Transactions with owners:									
Shares purchased	24	—	—	(845)	—	—	(845)	—	(845)
Dividends paid relating to 2017	24	—	—	—	—	(1,415)	(1,415)	—	(1,415)
Employees share-based payments:									
-Issuance of shares		—	14	41	—	—	55	—	55
-Tax credits related to share-based awards	13	—	—	—	—	2	2	—	2
Purchase of non-controlling interest		—	1	—	—	—	1	(22)	(21)
Total transactions with owners		31	10,024	(15,749)	(1,271)	10,278	3,313	3	3,316
Comprehensive income for the period:									
Profit/(loss) for the year		—	—	—	—	5,064	5,064	(2)	5,062
Other comprehensive income/ (expense):									
Financial derivatives		—	—	—	(24)	—	(24)	—	(24)
Available for sale securities		—	—	—	15	—	15	—	15
Remeasurements of post employment benefit obligation	13/ 28	—	—	—	57	—	57	—	57
Currency translation differences		—	—	—	130	—	130	—	130
Total Comprehensive income/ (loss) for the period		—	—	—	178	5,064	5,242	(2)	5,240
Balance at 31 December 2017		$ 31	$ 10,024	$ (15,749)	$ (1,093)	$ 15,342	$ 8,555	$ 1	$ 8,556

The notes on pages 56 to 128 are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

Millions of U.S. Dollars	Note	Share Capital	Share Premium	Treasury Shares	Other Reserves	Retained Earnings	Equity attributable to the owners of the company	Non-Controlling Interest	Total Equity
Balance at 1 January 2018		$ 31	$ 10,024	$ (15,749)	$ (1,093)	$ 15,342	$ 8,555	$ 1	$ 8,556
Adoption of accounting standards		—	—	—	(16)	34	18	—	18
Transactions with owners:									
Shares purchased	24	—	—	(1,878)	—	—	(1,878)	—	(1,878)
Common Stock dividends paid relating to 2018	24	—	—	—	—	(1,554)	(1,554)	—	(1,554)
Preferred stock dividends paid		—	—	—	—	(2)	(2)	—	(2)
Employees share-based payments:									
-Issuance of shares		—	27	37	—	(2)	62	—	62
-Tax credits related to share-based awards	13	—	—	—	—	(8)	(8)	—	(8)
Cancellation of Treasury shares		(9)	(10,013)	15,384	—	(5,362)	—	—	—
Acquisition of A. Schulman, Inc.		—	—	—	—	—	—	22	22
Purchase of non-controlling interest		—	(28)	—	—	—	(28)	—	(28)
Total transactions with owners		22	10	(2,206)	(1,109)	8,448	5,165	23	5,188
Comprehensive income for the period:									
Profit/(loss) for the year		—	—	—	—	4,652	4,652	—	4,652
Other comprehensive income/ (expense):									
Financial derivatives		—	—	—	62	—	62	—	62
Remeasurements of post employment benefit obligation	13/ 28	—	—	—	68	—	68	—	68
Currency translation differences		—	—	—	(90)	—	(90)	—	(90)
Total Comprehensive income/ (loss) for the period		—	—	—	40	4,652	4,692	—	4,692
Balance at 31 December 2018		$ 22	$ 10	$ (2,206)	$ (1,069)	$ 13,100	$ 9,857	$ 23	$ 9,880

The notes on pages 56 to 128 are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STAMENT OF CASH FLOWS

		Year Ended 31 December	
Millions of U.S. Dollars	Note	2018	2017
Cash flows from operating activities:			
Profit before income tax		$ 5,223	$ 5,740
Adjustments for:			
Depreciation, amortization and impairments	7	1,285	1,226
Share based compensation	9	39	55
Finance cost, net		392	274
Other (income) expense, net	11	(168)	(33)
Share of profit of investments accounted for using the equity method	17	(194)	(217)
Changes in working capital relating to:			
(Increase)/decrease in trade receivables		427	(514)
(Increase)/decrease in inventories		(93)	(535)
Increase/(decrease) in trade payables		(223)	133
Other, net		242	258
Cash generated from operations		6,930	6,387
Interest paid		(393)	(366)
Net income taxes paid		(1,209)	(1,044)
Net cash from operating activities		5,328	4,977
Cash flows from investing activities:			
Purchase of property, plant and equipment		(2,316)	(1,547)
Payments for repurchase agreements		—	(512)
Proceeds from repurchase agreements		—	381
Purchases of equity securities		(64)	—
Proceeds from the sale and maturities of equity securities		97	—
Proceeds from sales and maturities of held-to-maturity securities		—	75
Purchase of FVOCI Securities		(50)	(653)
Proceeds from sale and maturities of FVOCI Securities	4	423	499
Purchases of business and equity method investments		(1,814)	(21)
Net proceeds from sale of business and equity method investments	11	37	155
Proceeds from settlement of net investment hedges		1,108	609
Payments for settlement of net investment hedges		(1,078)	(658)
Proceeds from disposal of assets		—	29
Interest received		19	14
Dividends received from associates and joint ventures	17	229	212
Other, net		(132)	(127)
Net cash used in investing activities		(3,541)	(1,544)
Cash flows from financing activities:			
Repurchase of company ordinary shares	24	(1,854)	(866)
Repayments of borrowings	26	(408)	(1,000)
Proceeds from borrowings	26	97	990
Costs Related to Repayment of Long-Term Debt		—	(65)
Repayments of short term debt		(3)	—
Payment of Equity and Debt Issuance Cost		9	(8)
Net proceeds from commercial paper	26	810	(493)
Dividends paid	24	(1,554)	(1,415)
Preferred stock dividend paid		(2)	—
Other, net		(15)	(2)
Net cash used in financing activities		(2,920)	(2,859)
Net increase (decrease) in cash and cash equivalents		(1,133)	574
Cash and cash equivalents at beginning of period		1,579	946
Exchange rate differences		(31)	59
Cash and cash equivalents at end of the period	23	$ 415	$ 1,579

The notes on pages 56 to 128 are an integral part of these Consolidated Financial Statements.

1 General

LyondellBasell Industries N.V. is a limited liability company (*Naamloze Vennootschap*) incorporated under Dutch law by deed of incorporation dated 15 October 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 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 production of polymers. LyondellBasell Industries N.V.'s shares are listed on the New York Stock Exchange ("NYSE"). The address of our Principal executive offices is 4th Floor, One Vine Street, London, W1J0AH, The United Kingdom. Our registered office address is Delftseplein 27E, 3013 AA Rotterdam, The Netherlands and is registered at the chamber of commerce under number 24473890. Our other Principal office is 1221 McKinney St., Suite 300 Houston, Texas, USA 77010.

The Consolidated Financial Statements for the year ended 31 December 2018 of LyondellBasell N.V. were approved for issue by the Board of Directors on 10 April 2019.

The Consolidated Financial Statements are subject to adoption by the Annual General Meeting of Shareholders on 31 May 2019.

2 Summary of Significant Accounting Policies

The significant accounting policies applied in the preparation of these Consolidated Financial Statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

Basis of Preparation and Consolidation

The Consolidated Financial Statements of LyondellBasell N.V. have been prepared from the books and records of LyondellBasell Industries N.V. and its subsidiaries in accordance with International Financial Reporting Standards ("IFRS") and International Financial Reporting Interpretation Committee ("IFRIC") interpretations as adopted by the European Union. Subsidiaries are all entities over which the Company has control. The Company controls an entity when the Company is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Subsidiaries are fully consolidated from the date on which control is transferred to the Company. They are deconsolidated from the date that control ceases. All inter-company transactions and balances have been eliminated in consolidation.

As the corporate financial information of LyondellBasell Industries N.V. is included in the Consolidated Financial Statements, the Corporate Statement of Income is presented in abbreviated format in accordance with Section 402, Book 2 of Dutch Civil Code.

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

New and Amended Standards Adopted

We have applied the following standards and amendments for the first time for annual reporting period commencing 1 January 2018:

IFRS 15, *Revenue from Contracts with Customers including clarifications to IFRS 15*- IFRS 15 was issued in May 2014 and establishes a new five-step model that will apply to revenue arising from contracts with customers. Under IFRS 15, revenue is recognized at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. In April 2016, IASB issued amendments to IFRS 15 clarifying some of the requirements and providing additional transitional relief for companies that are implementing IFRS 15.

We adopted IFRS 15 and related amendments as of 1 January 2018, using the modified retrospective method applied to those contracts which were not completed as of that date. We recognized an $18 million adjustment to the beginning retained earnings balance for the cumulative effect of initially applying the new standard. Comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods. The impact of the adoption of this new guidance was immaterial for the year ended December 31, 2018, and we expect the impact to be immaterial to our Consolidated Financial Statements on an ongoing basis (see Note 6 *Revenue*).

IFRS 9, Financial Instruments-IFRS 9, issued in July 2014, replaces *IAS 39*, *Financial Instruments: Recognition and Measurement,* and introduces new guidance on classification and measurement of financial instruments, an expected credit loss model for calculating impairment of financial assets and general hedge accounting requirements. The Company adopted IFRS 9 as of 1 January 2018 without restating comparatives as allowed under IFRS 9.

IFRS 9 replaces the previous IAS 39 categories of held to maturity, loans and receivables and available for sale for financial assets with three principal categories for financial assets: measured at amortized cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL) based on the business model in which a financial asset is managed and its contractual cash flow characteristics. IFRS 9 largely retains the existing requirements in IAS 39 for the classification and measurement of financial liabilities and the recognition and derecognition of financial instruments. The adoption of IFRS 9 had the following impact on the Company's financial assets as regards their classification and measurement:

- Equity securities, formerly classified as available-for-sale, were classified as FVTPL with changes in fair value recorded within earnings. This resulted in reclassification of $16 million from other comprehensive income (OCI) to the opening balance of retained earnings at 1 January 2018.
- Debt securities, formerly classified as available-for-sale under IAS 39 will be classified as FVOCI. Changes in fair value continues to accumulate in OCI.

IFRS 9 requires an expected credit loss model as opposed to an incurred credit loss model under IAS 39 for impairment of financial assets. The expected credit loss model requires the Company to account for expected credit losses and changes in those expected credit losses at each reporting date to reflect changes in credit risk since initial recognition of the financial assets. The adoption of the expected credit loss model did not have a material impact on the Consolidated Financial Statements.

The new general hedge accounting requirements provide greater flexibility to the types of transactions eligible for hedge accounting, specifically broadening the types of instruments that qualify for hedging instruments and the types of risk components of non-financial items that are eligible for hedge accounting. In addition, the effectiveness test has been replaced with the principle of an ‘economic relationship'. Retrospective assessment of hedge effectiveness is also no longer required. The Company's qualifying hedging relationships in place as at 31 December 2017 qualified under IFRS 9 to continue their designations at 1 January 2018 with the exception of the following hedging relationships:

- We changed certain net investment hedges utilizing the forward method of assessing effectiveness to the spot method effective 1 January 2018. As a result, IFRS 9 transition guidance required our dedesignation of these hedges effective 1 January 2018 and the option to redesignate the hedges. We chose to redesignate these hedges effective 1 January 2018 under the spot method of assessing effectiveness pursuant to IFRS 9 guidance.

- We changed the nature of the hedged item of certain commodity price risk cash flow hedge designations effective 1 January 2018. As a result, IFRS 9 transition guidance required our dedesignation of these hedges effective 1 January 2018 with the option to redesignate under IFRS 9 guidance. We chose not to redesignate these hedges effective 1 January 2018.

IFRIC 22, Foreign Currency Transactions and Advance Considerations - This interpretation clarifies that, in determining the spot exchange rate to use on initial recognition of the related asset, expense or income (or part of it) on the derecognition of a non-monetary asset or non-monetary liability relating to advance consideration, the date of the transaction is the date on which an entity initially recognizes the non-monetary asset or non-monetary liability arising from the advance consideration. This Interpretation did not have a material impact on our Consolidated Financial Statements.

New standards, amendments and interpretations issued but not effective for the financial year 2018 and we have not elected early adoption

IFRS 16, Leases—IFRS 16 issued in January 2016 requires all leases, except for short-term leases (lease term of 12 months or less), to be recorded on the balance sheet by lessees by recognizing a right-of-use asset ("ROU") asset and the related lease liability at the commencement of the lease. The subsequent accounting of the leases is similar to the finance lease model under IAS 17 whereby lease costs will be recognized in the Consolidated Statement of Income over the lease term in the form of depreciation on the ROU asset and finance charges representing the unwind of the discount on the lease liability.

We adopted IFRS 16 on 1 January 2019, using the modified retrospective approach, without restating comparative information. We applied the practical expedient that allows us to grandfather our previous assessments of existing contracts if they are or contain leases. We elected to not apply lease accounting to leases with lease term of 12 months or less. We did not elect the hindsight practical expedient in determining the lease term of existing leases. We have implemented a lease accounting software solution and made the required updates to our systems and processes, including our internal control framework.

The adoption of the new standard resulted in the recording of additional ROU assets and lease liabilities of approximately $1.5 billion each, respectively, as of 1 January 2019. The difference between the additional ROU assets and lease liabilities, net of the deferred tax impact, was recorded as an adjustment to retained earnings. The new standard will not materially impact our Consolidated Statement of Income and Consolidated Statement of Cash Flows on an ongoing basis.

IFRIC 23, Uncertainty over Income Tax Treatments - IFRIC 23, issued in June 2017 addresses the accounting for income taxes when there is uncertainty over income tax treatments. Under IFRIC 23, where it is considered probable that a particular tax treatment will be accepted by the tax authorities, the accounting for income taxes is done on a consistent basis with the income tax filings. However, where it is not considered probable that a particular tax treatment will be accepted, the effect of the uncertainty is reflected in the income tax accounting by estimating the tax payable (or receivable) using either the most likely amount method or the expected value method. We will adopt the guidance retrospectively as of 1 January 2019. The adoption of this new guidance does not have a material impact on our Consolidated Financial Statements

Revised Conceptual Framework - In March 2018 International Accounting Standards Board (IASB) revised the conceptual framework which provides clarification on certain concepts and also introduces certain new concepts. The framework also provided updated definitions and recognition criteria for assets and liabilities and clarifies some important concepts. The new framework is effective from 1 January 2020. We are currently assessing the impact of the new framework on our Consolidated Financial Statements.

Business Combination

We recognize and measure the assets acquired and liabilities assumed in a business combination based on their estimated fair values at the acquisition date, with any remaining difference versus the purchase consideration recorded as goodwill or gain from a bargain purchase. Subsequent to the acquisition, and no later than one year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings. Acquisition-related costs are expensed as incurred.

Goodwill

Goodwill is allocated to cash-generating units for the purpose of impairment testing. The allocation is made to those cash-generating units or groups of cash-generating units that are expected to benefit from the business combination in which the goodwill arose.

Investments in Associates and Joint Arrangements

Investments in entities over which we have the right to exercise significant influence but not control are classified as associates. Arrangements under which we have contractually agreed to share control with another party or parties are joint arrangements. Investments in joint arrangements are classified as either joint operations or joint ventures, depending on the contractual rights and obligations that each investor has, rather than the legal structure of the joint arrangement. The Company has assessed the nature of its joint arrangements and determined that it has both joint operations and joint ventures.

Interests in associates and joint ventures are accounted for using the equity method. Under the equity method of accounting, the investment is initially recognized at cost and subsequently adjusted for our share of comprehensive income, dividends received and by loans of a long-term investment nature. Interests in joint operations are recognized by including our share of assets, liabilities, income and expenses on a line-by-line basis in accordance with our accounting policies. Unrealized gains and losses on other transactions between the Group and its associates and joint arrangements are eliminated to the extent of our interest in them.

At each reporting date, we determine whether there is any objective evidence of impairment of our investments in associates or joint ventures. If an impairment is indicated, we calculate the amount of impairment as the difference between the recoverable amount of the associate or joint venture and its carrying value and recognize the amount adjacent to Share of profit/(loss) of investments accounted for using the equity method in the Consolidated Statement of Income.

Foreign Currency Translation and Remeasurement

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 ("the reporting currency") through OCI as follows:

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

Transactions and Balances-Foreign currency transactions are translated into an entity's functional currency using exchange rates prevailing at the transaction date. Foreign exchange gains and losses resulting from the settlement of such transactions and from the remeasurement of monetary assets and liabilities denominated in foreign currencies at year-end exchange rates are recognized in our Consolidated Statements of Income.

Foreign exchange gains and losses that relate to borrowings and cash and cash equivalents are presented in the Consolidated Statement of Income within Finance costs. All other foreign exchange gains and losses are presented in the Consolidated Statement of Income within Other expense, net.

Revenue Recognition

Substantially all our revenues are derived from contracts with customers. We account for contracts when both parties have approved the contract and are committed to perform, the rights of the parties and payment terms have been identified, the contract has commercial substance, and collectability is probable.

Revenue is recognized when obligations under the terms of a contract with our customer are satisfied. This generally occurs at the point in time when performance obligations are fulfilled and control transfers to the customer. In most instances, control transfers upon transfer of risk of loss and title to the customer, which usually occurs when we ship products to the customer from our manufacturing facility. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods. Customer incentives are generally based on volumes purchased and recognized over the period earned. Sales, value added, and other taxes that we collect concurrent with revenue-producing activities are excluded from the transaction price as they represent amounts collected on behalf of third parties. We apply the practical expedient to recognize the incremental costs of obtaining a contract as expense when incurred if the amortization period of the asset that we otherwise would have recognized is one year or less. Shipping and handling costs not treated as a separate performance obligation.

Payments are typically required within a short period following the transfer of control of the product to the customer. We occasionally require customers to prepay purchases to ensure collectability. Such prepayments do not represent financing arrangements, since payment and fulfillment of the performance obligation occurs within a short time frame. We apply the practical expedient which permits us not to adjust the promised amount of consideration for the effects of a significant financing component when, at contract inception, we expect that payment will occur in one year or less

Contract balances typically arise when a difference in timing between the transfer of control to the customer and receipt of consideration occurs. Our contract liabilities, which are reflected in our Consolidated Financial Statements as Trade and other payables, consist primarily of customer payments for products or services received before the transfer of control to the customer occurs.

Segment Reporting

Our operations are managed through six operating segments. Each of the operating segments is separately managed under a structure that includes senior executives who report directly to our Chief Executive Officer and discrete financial information for each of the segments is available. Our Chief Executive Officer uses the operating results of each of the six operating segments for performance evaluation and resource allocation and, as such, is the chief operating decision maker.

Share-Based Compensation

The Company grants stock-based compensation awards that vest over a specified period upon meeting certain service and performance criteria. The fair value of equity instruments issued to employees is measured on the grant date and is recognized over the vesting period. The fair value of stock options is determined using the Black-Scholes model. The fair value of performance share units is determined using a Monte Carlo model.

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

Finance leases, which transfer to the group substantially all the risks and benefits incidental to ownership of the leased item, are capitalized at inception of the lease at the fair value of the leased property or, if lower, at the present value of the minimum lease payments. All other leases are operating leases. Lease payments for finance leases are apportioned to finance charges and reduction of the lease liability so as to achieve a constant rate of interest on the remaining balance of the liability. Finance charges are included in Finance costs. Capitalized leased assets are depreciated over the shorter of the estimated useful life of the asset or the lease term. Operating lease payments are recognized as an expense over the lease term on a straight-line basis.

Intangible Assets

Intangible Assets—Intangible assets primarily consist of customer relationships, trade names, know how, emission allowances, various contracts (favorable utility contracts and licensing contracts), research and development and software costs. These assets are amortized using the straight-line method over shorter of their estimated useful lives or the expected term of the contractual agreement.

Research and development—Costs incurred on development projects are recognized as intangible assets when it is probable that we will achieve economic benefits in the future, considering its commercial and technological feasibility, and costs can be measured reliably. Research expenditure and development expenditure that do not meet the aforementioned criteria are recognized as expense as incurred. Development costs that have a finite useful life and that have been capitalized are amortized on a straight-line basis over the period of expected useful life from the date that services can be offered. The expected useful life is generally 10 years.

Capitalized development projects are impaired if the recoverable amount falls below the carrying value of the related asset.

Other intangible assets—Costs associated with maintaining computer software programs are recognized as expense is incurred. Development costs that are directly attributable to the design and testing of identifiable and unique software products controlled by the Company are recognized as intangible assets when the recognition criteria are met. The capitalized costs are amortized over the estimated useful life, which is between 3 and 10 years.

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 of major projects exceeding one year, costs of major maintenance arising from turnarounds of major units when it is probable that there is an associated future economic benefit, and committed decommission costs. Routine maintenance and repair 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, generally as follows:

- 25 years for major manufacturing equipment
- 30 years for buildings
- 5 to 20 years for light equipment and instrumentation
- 15 years for office furniture
- 4 to 7 years for turnarounds of major units, and
- 3 to 5 years for information system equipment.

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

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 Statement of Income.

Impairments of Non-Financial Assets

Assets that have an indefinite useful life, including goodwill, are not subject to amortization and are tested annually for impairment. Assets that are subject to amortization are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units) which for the Company 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). Non-financial assets other than goodwill that have been impaired are reviewed for possible reversal of the impairment at each reporting date.

Derivative Financial Instruments and Hedging Activities

Pursuant to our risk management policies, 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. Derivatives used for this purpose are generally designated as net investment hedges, cash flow hedges or fair value hedges. 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 designated as net investment hedges and cash flow hedges, the effective portion of the gains and losses is recorded in Other comprehensive income (loss). The ineffective portion of net investment hedges and cash flow hedges is recorded in earnings. For net investment hedges, gains and losses accumulated in equity are included in the income statement when the foreign currency operation is partially disposed of or sold. For cash flow hedges, gains and losses accumulated in equity are included in the income statement when the hedged item affects profit or loss. For derivatives that have been designated as fair value hedges, the gains and losses of the derivatives and hedged instruments are recorded in earnings.

Derivatives are initially recognized at fair value on the inception date and are subsequently re-measured at fair value as of each reporting date. The method of recognizing the resulting gain or loss depends on whether the derivative is designated as a hedging instrument, and if so, the nature of the item being hedged. The Company designates certain derivatives as either:

a. hedges of the fair value of recognized assets or liabilities (fair value hedge); or
b. hedges of a particular risk associated with a recognized asset or liability or a highly probable forecast transaction (cash flow hedge); or
c. hedges of a net investment in a foreign operation (net investment hedge).

At the inception of the transaction, the Company documents the relationship between the hedging instrument and the hedged item, its risk management objectives and strategy for undertaking various hedging transactions. The Company also documents its assessment, both at hedge inception and on an ongoing basis, of whether the derivative that is used in the hedging transaction is highly effective in offsetting changes in the fair value or cash flow of the hedged item.

The fair values of various derivative instruments used for hedging purposes are disclosed in Note 20. The full fair value of the derivatives is classified as a non-current asset or liability if the remaining maturity of the derivative is more than 12 months and as a current asset or liability if the remaining maturity is less than 12 months.

(a) Fair value hedges

Our fair value hedges consist of fixed-for-floating interest rate swaps. We use the long-haul, quantitative 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.

The Company applies fair value hedge accounting for hedging the changes in fair value of fixed-rate borrowings. The gain or loss relating to the effective and ineffective portion of interest rate swaps hedging fixed rate borrowings as well as changes in value of the fixed-rate borrowings attributable to interest rate risk are recognized in the Consolidated Statement of Income in Finance costs.

We evaluate the effectiveness of the hedging relationship quarterly and calculate the changes in the fair value of the derivatives and the underlying hedged item basis adjustments separately. If the hedge no longer qualifies for hedge accounting, the adjustment to the carrying amount of the hedged item is amortized over its remaining term utilizing the effective interest method.

(b) Cash flow hedges

Our cash flow hedges include cross currency swaps, forward starting interest rate swaps, and commodity futures.

Cash flow hedges utilizing commodity futures may use a critical terms or long-haul, qualitative method to assess hedge effectiveness. We use the dollar offset method under the hypothetical derivative method to measure ineffectiveness.

For our forward starting interest rate swaps, we use the long-haul, quantitative method to assess hedge effectiveness under the hypothetical derivative approach. We use the dollar offset method under the hypothetical derivative method to measure hedge ineffectiveness.

When a hedging instrument expires or is sold, or when a hedge no longer qualified for hedge accounting, any cumulative gain or loss existing in Equity at that time remains and is recognized in the Consolidated Statement of Income when the forecast transaction ultimately is recognized in the Consolidated Statement of Income. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in Equity is immediately transferred to the Consolidated Statement of Income in the line item the hedged forecast transaction would have been recorded to within the Consolidated Statement Income.

(c) Net investment hedges

Our net investment hedges include foreign currency derivatives and foreign currency denominated debt. Our foreign currency derivative contracts may consist of cross currency basis swaps and foreign currency forward exchange contracts.

For all our hedging instruments, we use the spot method to assess hedge effectiveness resulting in changes to their value from changes in spot foreign exchange rates over the hedge accounting designation to be recorded within Other Comprehensive Income while the effect of the initial forward points and cross currency basis spread are excluded from the assessment of hedge effectiveness. For our cross currency basis swaps, the associated interest receipts and payments are recorded to Finance costs. For our foreign currency forward contracts, we amortize initial forward point values on a straight-line basis to Finance cost over the tenor of the hedge designation. We monitor over hedging conditions quarterly and rebalance the hedge designation as required to remove any overhedged condition, recording any incurred ineffectiveness just prior to rebalance.

Cash flows related to our foreign currency contracts designated as net investment hedges are reported in Cash flows from investing activities in the Consolidated Statement of Cash Flows. Cash flows related to our foreign currency denominated debt designated as net investment hedges are reported in Cash flows from financing activities and related interest payments are reported in Cash flows from operating activities in the Consolidated Statement of Cash Flows.

Classification of Financial Assets and Liabilities

Financial assets are classified based on their respective business models. We have financial assets held with the objective to collect contractual cash flows representing solely principal and interest on the principal amount outstanding on the specific date and are carried at amortized cost. Additionally, we have financial assets held with the objective to collect these cash flows, however, reserving the option to sell such financial assets prior to their maturity and are carried at FVOCI. All other financial assets are measured at FVTPL.

We have financial liabilities recorded at amortized cost and FVTPL.

Offsetting Financial Instruments

Financial assets and liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis, or realize the asset and settle the liability simultaneously.

Fair Value Measurement

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.

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 fair value of all non-derivative financial instruments included in Current assets described below, 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. Current assets include Cash and cash equivalents, Restricted cash, Financial assets at amortised costs time deposits and Accounts receivable.

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, and spot and forward exchange 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.

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

Fair value through OCI 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.

Our limited partnership investments are disclosed as Level 1 and Level 2 in the fair value hierarchy. Our level 1 valued fund is actively traded based on the current day published NAV (net asset value). The published NAV represents the exit price for a unit in the fund.

The value of our other two limited partnership funds is based on their monthly published NAV. which is available to market participants. The funds have a 60 and 90 day redemption feature, respectively, whereby the exit price is the NAV 60 or 90 days after the redemption request. The historic 90 day liquidity risk (volatility of the NAV over the maximum redemption period), which is considered to be an unobservable input, has an immaterial impact on the published NAV. Therefore, the funds have been determined to be level 2 in the fair value hierarchy

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.

Impairment of Financial Assets

We measure the loss allowance for trade receivables at an amount equal to lifetime expected credit loss ("ECL") using historical, current and available forward-looking information based on the simplified method using a provision matrix. We separate our customers by risk class and evaluate the credit risk by class.

We measure the loss allowance for debt security instruments at an amount equal to the lifetime ECL if the credit risk on that financial instrument has increased significantly since initial recognition. However, if the credit risk on a financial instrument has not increased significantly since initial recognition we measure the loss allowance for that financial instrument at an amount equal to 12-month ECL. The allowance for credit losses is recorded in the Consolidated Statement of Income.

We have receivables for tri-party repurchase agreements in which we make purchase of securities where the counterparty has an obligation to repurchase and we have an obligation to see the same securities at a predetermined date for a price equal to the purchase price plus interest. These securities are held by a third-party custodian and have a minimum collateral value of 102% securing the counterparties' obligation to repurchase the securities. Because we consider this collateral in the measurement of ECL, we record no ECL for such repurchase agreements.

Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the first in, first out ("FIFO") method. The cost of finished goods and work in progress comprises directly attributable costs and related production overheads (based on normal operating capacity). Net realizable value is the estimated selling price in the ordinary course of business, less the estimated cost of completion and the estimated costs necessary to make the sale.

Current Trade Receivables

Current trade receivables are initially recognized at fair value and subsequently measured at amortized cost, which generally corresponds to face value, less an adjustment for loss allowance.

Cash Equivalents

Cash equivalents consist of highly liquid debt instruments such as certificates of deposit, commercial paper and money market accounts placed with major international banks and financial institutions. Cash equivalents include instruments with maturities of three months or less when acquired. Bank overdrafts are shown within Borrowings in current liabilities on the balance sheet. Cash equivalents are stated at fair value. Cash and cash equivalents exclude restricted cash.

Although, we have no current requirements for compensating balances in a specific amount at a specific point in time, we maintain compensating balances at our discretion for some of our banking services and products.

Borrowings

Borrowings are initially recognized at the fair value of the proceeds received, net of transaction costs. Subsequently, borrowings are stated at amortized cost using the effective interest method. Amortized cost is calculated by taking into account any discount or premium. Interest expense on outstanding borrowings are accrued and recorded each period in the Consolidated Statement of Income.

Fees paid on the establishment of loan facilities are recognized as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. In this case, the fee is deferred until the draw-down occurs. To the extent there is no evidence that it is probable that some or all of the facility will be drawn down, the fee is capitalized as a pre-payment for liquidity services and amortized over the period of the facility to which it relates.

Income Taxes

The income tax for the period comprises current and deferred tax. Income tax is recognized in the Consolidated Statement 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.

The current income tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect to previous years. Management evaluates positions with respect to applicable tax regulation which is subject to interpretation. The Company establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

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, using the liability method. Deferred income taxes are measured at the tax rates and under the tax laws that have been enacted or substantially enacted at the balance sheet date and are expected to apply when the related deferred tax assets are realized or the deferred tax liabilities are settled. At 31 December 2017 the remeasurement of our deferred tax balances was materially affected by the U.S. enactment of "H.R.1," also known as the "Tax Act", as explained on Notes 13 and 27 to the Consolidated Financial Statements.

Deferred tax assets, including assets arising from losses carried forward, are recognized to the extent that it is probable that future taxable profits will be available against which the deductible temporary differences and unused tax losses can be utilized.

Employee Benefits

Pension plans—We have both defined benefit (funded and unfunded) and defined contribution plans. For the defined benefit plans, a defined 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, the net interest expense (income) that is calculated as the product of the net defined benefit liability (asset) and the discount rate determined at the end of the year and employees past-service costs.

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

For defined contribution plans, we pay contributions to publicly or privately administered pension insurance plans on a mandatory, contractual or voluntary basis. The contributions are recognized as employee benefit expense when they are due.

Other post-employment obligations—Certain employees are entitled to post-retirement 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 using the same accounting methodology as used for defined benefit plans.

Termination benefits—Termination benefits are payable when employment is terminated before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. We recognize termination benefits when we are committed to either terminating the employment of current employees according to a detailed formal plan without possibility of withdrawal, or providing termination benefits as a result of an offer made to encourage voluntary redundancy. Benefits falling due more than 12 months after the balance sheet date are discounted to present value.

Trade and Other Payables

Trade and other payables are presented as current liabilities unless payment is not due within 12 months after the reporting period. Trade and other payables are initially recognized at fair value and subsequently measured at amortized cost, which generally corresponds to face value.

Other Provisions

Provisions are recognized when all of the following conditions are met:

- there is a present legal or constructive obligation as a result of past events;
- it is probable that a transfer of economic benefits will settle the obligation; and
- a reliable estimate can be made of the amount of the obligation. The probable amount required to settle long-term obligations is discounted if the effect of discounting is material. Where discounting is used, the increase in the provision due to the passage of time is recognized as interest costs.

Asset Retirement Obligation—At some sites, we are contractually obligated to decommission our plants upon site exit. These obligations are recorded at their fair value at the time the obligation is incurred. Upon initial recognition of the liability, that cost is capitalized as part of the related long lived asset and depreciation is recognized 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 accretion expenses are included in Finance costs.

Share capital

Ordinary shares are classified as equity. Where any group company purchases the company's equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs (net of income taxes) is deducted from equity attributable to the company's equity holders until the shares are cancelled or reissued. Where such ordinary shares are subsequently reissued, any consideration received, net of any directly attributable incremental transaction cost and the related income tax effects, is included in equity attributable to the company's equity holders.

3 Critical Accounting Estimates and Judgments

The preparation of financial statements in conformity with IFRS requires management to make estimates and judgments that affect the reported amounts of assets and liabilities and the reported amounts of revenue and expenses during the period as well as the information disclosed.

Critical Accounting Estimates and Assumptions

For our critical accounting estimates and assumptions, reference is made to the notes to these Consolidated Financial Statements, including the determination of deferred tax assets for loss carry forwards and the provision for tax contingencies (see Notes 13 and 27), the determination of fair value and the value of cash-generating units for use in goodwill impairment testing (see Note 15), the depreciation rates for property, plant and equipment (see Note 16) and intangible assets (see Note 15), the discount rate used to determine the provision for retirement benefit obligations and periodic pension cost (see Note 28) and the more likely than not assessment required to determine if a provision should be recognized and measured (see Notes 30 and 31).

Also, reference is made to Note 4 Financial Risk Management, which discusses our exposure to credit risk and financial market risks.

Actual results in the future may differ from these estimates. Management estimates and judgments are continually evaluated based on historic experience and other factors, including expectations of future events believed to be reasonable under the circumstances.

Critical Accounting Judgments in Applying LyondellBasell N.V.'s Accounting Policies

Property, plant and equipment and intangible assets—With respect to 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.

Goodwill—As of 31 December 2018, we recognized $1,599 million of goodwill. Of this amount $1,271 million was recognized as a result of the acquisition of A. Schulman, which mainly relates to acquired workforce and synergies expected from the acquisition. All of the goodwill was assigned to our APS segment. The remaining goodwill at 31 December 2018 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 acquisition of LyondellBasell Subholdings B.V. and LyondellBasell Finance Company on 30 April 2010. 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 group of cash generating units may not be fully recoverable.

Joint Arrangements—We are a party to several joint arrangements. The Company has joint control over these arrangements as unanimous consent is required from all parties to the agreements to direct the activities that significantly affect the returns of the arrangement, such as annual production budgets, capital expenditures, incurrence of indebtedness, election of key management team members, approval of pricing policies and admission of new parties.

The classification of these joint arrangements as either a joint operation or a joint venture is driven by the rights and obligations of the parties arising from the arrangement rather than the legal form of the arrangement.

The Company's joint ventures are structured as limited companies and provide the Company and the parties to the agreements with rights to the net assets of the limited companies under the arrangements. The parties are not substantially the only source of cash flows contributing to the continuity of the operations of the joint venture.

The output of the Company's joint operations is for the sole use of the parties to the joint arrangement. The parties are substantially the only source of cash flows contributing to the continuity of the operations of the joint operation.

Employee Benefits—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 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.

The benefit obligation and the periodic cost of other postretirement medical benefits also are measured based on assumed rates of future increase in the per capita cost of covered health care benefits.

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.

4 Financial Risk Management

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.

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. Natural gas, crude oil and refined products, along with feedstocks for ethylene and propylene production, constitutes the main commodity exposures. We try to protect against such instability through various business strategies including provisions in sales contracts which allows us to pass on higher raw material costs to our customers through timely price increases and through the use of commodity swap and futures contracts.

In 2018 we entered into commodity futures contracts with a total notional amount of $198 million to mitigate the risk of variability in feedstock prices for the year 2019. Additionally in 2018, we entered into commodity futures contracts with a total notional amount of $274 million to mitigate the risk of variability in product sales prices for the year 2019.

As of 31 December 2018, on a pre-tax basis $60 million, and $48 million is scheduled to be reclassified as an increase to sales, and increase to cost of sales, respectively, over the next twelve months.

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 for our commodity derivative instruments, given a certain move in prices over a certain period of time, using specified confidence levels. Utilizing a Monte Carlo simulation with a 95 percent confidence level over a 3-day time horizon, the effect on our pre-tax income and cash flows for the years ended 31 December 2018 and 2017 would be immaterial.

Foreign Exchange Risk

We manufacture and market our products in many countries throughout the world and, as a result, are exposed to changes in foreign currency exchange rates.

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 OCI 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.

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 inter-company receivables and payables and inter-company loans.

We maintain risk management control systems intended to monitor foreign currency risk attributable to 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. We enter into foreign currency forward contracts to reduce the effects of our net currency exchange exposures. At 31 December 2018, these foreign currency contracts, which will mature between January 2019 and August 2019, inclusively, had an aggregated notional amount of $1,764 million and the fair value was a net liability of $4 million. A 10% fluctuation compared to the U.S. dollar would have had a resulting additional impact to earnings of approximately $96 million.

For foreign currency forward and swap contracts that economically hedge recognized foreign currency monetary assets and liabilities in foreign currencies, hedge accounting is not applied. Changes in the fair value of such forward and swap contracts, which are reported in the Consolidated Statement of Income, are offset in part by the currency translation results recognized on the assets and liabilities.

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.

At 31 December 2018, 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 result in an additional impact to earnings of approximately $3 million.

Net Investment hedges—We enter into foreign currency contracts and foreign currency denominated debt to reduce the volatility in stockholders' equity resulting from changes in currency exchange rates of our foreign subsidiaries with respect to the U.S. dollar. In 2018 we entered into €800 million of foreign currency contracts that were designated as net investment hedges.

In 2018 foreign currency contracts with an aggregate notional value of €925 million expired. Upon settlement of these foreign currency contracts in 2018, we paid €925 million ($1,078 million at the expiry spot rate) to our counterparties and received $1,108 million from our counterparties.

In 2017, we entered into €617 million of foreign currency contracts that were designated as net investment hedges. In 2017, foreign currency contracts with an aggregate notional value of €550 million expired. Upon settlement of these foreign currency contracts in 2017, we paid €550 million ($658 million at the expiry spot rate) to our counterparties and received $609 million from our counterparties.

At 31 December 2018 and 31 December 2017 we had outstanding foreign currency contracts with an aggregate notional value of €617 million ($650 million) and €742 million ($789 million), respectively, designated as net investment hedges. In addition, at 31 December 2018 and 31 December 2017, we had outstanding foreign-currency denominated debt, with notional amounts totaling €750 million ($858 million) and €750 million ($899 million), respectively, designated as a net investment hedge.

At 31 December 2018 we recognized $17 million gain in other comprehensive income relating to the cost of hedging and $2 million gain in profit or loss relating to ineffectiveness. There was no ineffectiveness recorded for any of these net investment hedging relationships for the year ended 31 December 2017.

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 not been designated as hedges, we will make interest payments in euros and receive interest in U.S. 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. Each reporting period, the swaps are marked to market to arrive at their fair value. The resulting gains and losses are classified as Other (income) expense, net.

Cross-currency swaps with a notional value of $2,300 million are outstanding as at 31 December 2018 and these foreign currency contracts matured from 2021 to 2027. Cross currency swaps has a net asset fair value of $96 million as at 31 December 2018. A 10% fluctuation compared to the U.S. dollar would have had a resulting additional impact to earnings of approximately $243 million. Finance costs in the Consolidated Statement of Income reflected gains of $106 million and $266 million for the periods ended 31 December 2018 and 2017, respectively, related to changes in currency exchange rates and cross-currency swaps.

Interest Rate Risk

Interest rate risk management is viewed as a trade-off between cost and risk. The cost of interest is generally lower for short-term debt and higher for long-term debt, and lower for floating rate debt and higher for fixed rate debt. However, the risk associated with interest rates is inversely related to the cost, with short-term debt carrying a higher refinancing risk and floating rate debt having higher interest rate volatility. Our interest rate risk management strategy attempts to optimize this cost/risk/reward trade-off.

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. To minimize earnings at risk as part of our interest rate risk strategy, we target to maintain floating rate debt, through the use of interest rate swaps, equal to our cash and cash equivalents, marketable securities and tri-party repurchase agreements, as those assets are invested in floating rate instruments.

Cash Flow Hedges—A pre-issuance interest rate strategy is utilized to mitigate the risk that benchmark interest rates (i.e. US Treasury, mid-swaps, etc.) will increase between the time a decision has been made to issue debt and when the actual debt offering is issued. In March 2015 and 2018 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 and 2021. These interest rate swaps will be terminated upon debt issuance. At 31 December 2018, the total notional amount of these interest rate contracts designated as cash flow hedges was $1,000 million and $500 million respectively, and their fair value were a net asset of $7 million and a net liability of $5 million respectively. We estimate that a 10% change in market interest rates as of 31 December 2018 would change the fair value of our forward-starting interest rate swap outstanding and would have had a resulting impact on Other comprehensive loss of approximately $71 million.

In February 2019 we entered into forward-starting interest rate swaps with a total notional amount of $1,000 million to mitigate the risk of variability in interest rates for an expected debt issuance by February 2020. These swaps were designated as cash flow hedges and will be terminated upon debt issuance. Additionally, concurrent with the redemption of $1,000 million of our outstanding 5% senior notes due 2019, we received $4 million in settlement of $1,000 million of forward-starting interest rate swaps designated as cash flow hedges of forecasted interest payments to begin on or before April 15, 2019.

In 2018 we entered into forward-starting interest rate swaps with a total notional amount of $500 million to mitigate the risk of variability in interest rates for an expected debt issuance by November 2021. These swaps were designated as cash flow hedges and will be terminated upon debt issuance.

In 2018 and 2017, there were no settlements of our forward-starting interest rate swap agreements.

The ineffectiveness recorded for this hedging relationship was less than $1 million for the years ended 31 December 2018 and 2017.

As of 31 December 2018, less than $1 million (on a pretax basis) is scheduled to be reclassified as a decrease to interest expense over the next twelve months.

Fair Value Hedges—We use interest rate swaps 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-rate for floating-rate interest payments to effectively convert our fixed-rate debt to floating-rate debt.

In February 2019, concurrent with the redemption of $1,000 million of our outstanding 5% senior notes due 2019, we paid $5 million in settlement of $1,000 million of fixed-for-floating interest rate swaps.

In 2018 we entered into a euro fixed-for-floating interest rate swap to mitigate the change in the fair value of €125 million ($147 million) of our €750 million notes payable due 2022 associated with the risk of variability in the 6-month EURIBOR rate (the benchmark interest rate). The fixed-rate and variable-rate are settled annually and semi-annually, respectively.

In 2017, we entered into U.S. dollar fixed-for-floating interest rate swaps to mitigate changes in fair value of our $1,000 3.5% guaranteed notes due 2027 associated with the risk of variability in the 3 Month USD LIBOR rate. The fixed-rate and variable-rate are settled semi-annually and quarterly, respectively.

In 2014, we entered into U.S. dollar fixed-for-floating interest rate swaps to mitigate changes in the fair value of our $2,000 million 5% senior notes due 2019. In March 2017, concurrent with the redemption of $1,000 million of our outstanding 5% senior notes due 2019, we dedesignated the related $2,000 million fair value hedge and terminated swaps in the notional amount of $1,000 million. At the same time, we re-designated the remaining $1,000 million notional amount of swaps as a fair value hedge of the remaining $1,000 million of 5% senior notes outstanding.

In 2017, we entered into U.S. dollar fixed-for-floating interest rate swaps with aggregate notional of $400 million to mitigate changes in our 1,000 million 6% senior notes due 2021 associated with the risk of variability in the 1 Month USD LIBOR rate. The fixed and variable payments for the interest rate swaps related to our 6% senior notes due 2021 are settled semi-annually and monthly, respectively.

At 31 December 2018 and 31 December 2017, we had outstanding fixed for floating interest rate swaps with aggregate notional amounts of $3,143 million and $3,000 million respectively, designated as fair value hedges. The fixed for floating interest rate swaps outstanding at 31 December 2018 mature from 2019 to 2027 and its fair value was a liability of $42 million.

We recognized no loss during the year ended 31 December 2018 and a loss of $16 million for 31 December 2017, related to the ineffectiveness of our hedging relationships.

For the years ended 31 December 2018 and 2017, the pretax effect of the periodic receive fixed interest and pay variable interest associated with our fixed-for-floating interest rate swaps resulted in an additional gain (loss) recognized in interest expense of $5 million and $23 million, respectively.

At 31 December 2018, after giving consideration to the $3,143 million of fixed-rate debt that we have effectively converted to floating through these U.S. dollar fixed-for-floating interest rate swaps, approximately 58% of our debt portfolio, on a gross basis, incurred interest at a fixed-rate and the remaining 42% of the portfolio incurred interest at a variable-rate. We estimate that a 10% change in market interest rates as of 31 December 2018 would change the fair value of our interest rate swaps outstanding and affect our profit before income tax by approximately $26 million.

Variable-rate debt—Our variable rate debt consists of our $2,500 million Senior Revolving Credit Facility, our $900 million U.S. Receivables Facility and our Commercial Paper Program. At 31 December 2018, there were no outstanding borrowings under our Senior Revolving Credit Facility nor U.S. Receivables facility. Our Commercial Paper Program had outstanding borrowings of $809 million at 31 December 2018. We estimate that a 10% change in interest rates would have a $2 million impact on earnings based on the average variable-rate debt outstanding per year.

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.

Marketable Securities—We invest cash in investment-grade securities for periods not exceeding three years. Investments in securities with original maturities of three months or less are classified as Cash and cash equivalents. At 31 December 2018 and 2017, we had marketable securities classified as Cash and cash equivalents of $19 million and $1,035 million, respectively.

We also have investments in marketable securities classified as fair value through other comprehensive income (FVOCI). Investments classified as FVOCI are carried at fair value with unrealized gains and losses recorded in other comprehensive income. We periodically review our FVOCI 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 current Trade and other receivables or as long-term receivables reflected in noncurrent Trade and other receivables on our Consolidated Statement of Financial Position. The balance of our investment at 31 December 2018 and 2017 was $544 million and $570 million, respectively.

Investments in Marketable Securities—The following table summarizes the amortized cost, gross unrealized gains and losses, and fair value of our FVOCI securities that are outstanding as of 31 December 2018 and 2017.

	31 December 2018			
Millions of U.S. Dollars	**Cost**	**Gross Unrealized Gains**	**Gross Unrealized Losses**	**Fair Value**
Financial Assets at Fair Value through other comprehensive income				
Bonds	$ 567	$ —	$ —	$ 567
Total Financial assets at Fair value through other comprehensive income	$ 567	$ —	$ —	$ 567

	31 December 2017			
Millions of U.S. Dollars	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Available-for-sale securities				
Commercial paper	$ 180	$ —	$ —	$ 180
Bonds	630	—	—	630
Certificates of deposit	150	—	—	150
Limited partnership investments	350	2	(5)	347
Total available-for-sale securities	$ 1,310	$ 2	$ (5)	$ 1,307

In 2017 , our equity securities classified at available-for-sale consist of our limited partnership investments, which 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 may be redeemed at least monthly with advance notice ranging up to ninety days. The fair value of these funds uses net asset value ("NAV") per share of the respective pooled fund investment.

No losses related to other-than-temporary impairments of our investments at FVOCI a have been recorded in other comprehensive loss during the year ended 31 December 2018 and the year ended 31 December 2017.

As of 31 December 2018, our bonds classified as FVOCI securities had maturities between two and twenty-five months.

The proceeds from maturities and sales of our FVOCI securities during the years ended 31 December 2018 and 2017 are summarized in the following table.

	31 December	
Millions of U.S. Dollars	2018	2017
Proceeds from maturities of securities	$ 423	$ 499

No gain or loss was realized in connection with the sale of our FVOCI securities during the year ended 31 December 2018 and 2017 respectively.

We use the specific identification methods to identify the cost of the securities we sell and the amounts we reclassify out of Other comprehensive income into earnings.

The following table summarizes the fair value and unrealized losses related to FVOCI securities that were in a continuous unrealized loss position for less than and greater than twelve months as of 31 December 2018 and 2017.

	31 December 2018			
	Less than 12 months		Greater than 12 months	
Millions of U.S. Dollars	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Fair Value through Other comprehensive income securities				
Bonds	$ 118	$ (1)	$ 45	$ —

	31 December 2017			
	Less than 12 months		Greater than 12 months	
Millions of U.S. Dollars	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Available-for-sale securities				
Commercial Paper	$ 180	$ —	$ —	$ —
Bonds	187	—	—	—
Limited partnership investments	117	(5)	—	—
Total	$ 484	$ (5)	$ —	$ —

Investments in Equity Securities—Our equity securities primarily consist of our limited partnership investments, which 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 may be redeemed at least monthly with advance notice ranging up to ninety days. The fair value of these funds uses net asset value ("NAV") per share of the respective pooled fund investment. These investments which are classified as FVTPL had a notional amount of $322 million and a fair value of $325 million at 31 December 2018.

The following table summarizes the portion of unrealized gains and losses for the equity securities classified at FVTPL that are outstanding as of 31 December 2018:

Millions of U.S. dollars		
Net gains recognized during the period	$	11
Less: Net gains recognized during the period on securities sold		5
Unrealized gains recognized during the period	$	6

Capital Risk Management

Capital includes equity attributable to the equity holders of the parent. A discussion of credit risk can be found in Note 19.

The primary objective of the Group's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios in order to support its business and maximize shareholder value.

The Group manages its capital structure and makes adjustments to it in light of changes in economic conditions. To maintain or adjust the capital structure, the Group may issue new debt, repay debt, return capital to shareholders or issue new shares.

Liquidity and Capital Resources—As of 31 December 2018, we had unrestricted cash and cash equivalents of $415 million ($1,579 million in 2017). In addition at 31 December 2018, we had total unused availability under our credit facilities of $2,517 million ($3,400 million in 2017) and $892 million marketable securities classified as FVOCI and FVTPL ($1,307 million in 2017). We also held $544 million of tri-party repurchase agreements classified as other receivables ($570 million in 2017).

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. In connection with any repayment or redemption of our debt, we may incur cash and non-cash charges, which could be material in the period in which they are incurred.

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 the 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.

The table below provides a maturity analysis of our financial liabilities based on the remaining contractual maturities as of 31 December 2018.

Millions of U.S. Dollars	Total obligations	Less than 1 year	Between 1 to 2 years	Between 2 to 5 years	Over 5 years
31 December 2018					
Borrowings (excluding finance lease liabilities)	$ 9,720	$ 1,908	$ 39	$ 2,723	$ 5,050
Interest payment on total debt	5,155	382	357	936	3,480
Trade and other payables	4,442	4,442	—	—	—
Commodity derivatives	15	15	—	—	—
	$ 19,332	$ 6,747	$ 396	$ 3,659	$ 8,530

Millions of U.S. Dollars	Total obligations	Less than 1 year	Between 1 to 2 years	Between 2 to 5 years	Over 5 years
31 December 2017					
Borrowings (excluding finance lease liabilities)	$ 8,855	$ 86	$ 1,014	$ 1,955	$ 5,800
Interest payment on total debt	5,566	408	383	1,014	3,761
Trade and other payables	4,145	4,145	—	—	—
Commodity derivatives	37	37	—	—	—
	$ 18,603	$ 4,676	$ 1,397	$ 2,969	$ 9,561

Fair Value Estimates

The following table summarizes financial assets and liabilities outstanding at 31 December that are measured at fair value on a recurring basis.

Millions of U.S. Dollars	31 December 2018 Notional Amount	31 December 2018 Fair Value	31 December 2017 Notional Amount	31 December 2017 Fair Value
Assets -				
Derivatives designated as hedges:				
Foreign currency	$ —	$ 2	$ —	$ 1
Interest Rates	743	34	650	21
Commodities	472	12	—	—
Derivatives not designated as hedges				
Commodities	35	5	105	20
Foreign currency	2,599	144	2,019	50
Non-derivatives:				
Debt securities	567	567	960	960
Equity securities	322	325	350	347
	$ 4,738	$ 1,089	$ 4,084	$ 1,399
Liabilities -				
Derivatives designated hedges				
Commodities	$ —	$ —	$ 102	$ 8
Foreign currency	650	54	789	115
Interest Rates	3,900	61	3,350	63
Derivatives not designated hedges:				
Commodities	67	15	81	29
Foreign Currency	1,465	46	1,295	65
	$ 6,082	$ 176	$ 5,617	$ 280

With the exception of Level 1 classified commodity derivatives designated as hedges, all derivatives and FVOCI securities in the tables above are classified as Level 2, except our limited partnership investments equity securities, that are measured at fair value using the net asset value per share (or its equivalent) practical expedient and have not been classified in the fair value hierarchy. Level 1 classified commodity derivatives designated as hedges had a notional and fair value of $472 million and $12 million, respectively, as of December 31, 2018. Fair value includes the net of a $60 million derivative asset and a $48 million derivative liability.

Financial Instruments Not Measured at Fair Value on a Recurring Basis—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 31 December 2018 and 2017. Short-term and long-term loans receivable, which represent our repurchase agreements, and current and non-current borrowings are recorded at amortized cost in the Consolidated Statement of Financial Position. The carrying and fair value of current and non-current borrowings exclude finance lease liabilities and commercial paper.

	31 December 2018		31 December 2017	
Millions of U.S. Dollars	**Carrying Value**	**Fair Value**	**Carrying Value**	**Fair Value**
Non-derivatives:				
Assets:				
Short-term loans receivables	$ 544	$ 544	$ 570	$ 570
Liabilities				
Current borrowings	$ 1,901	$ 1,915	$ 86	$ 96
Non-Current borrowings	7,662	7,639	8,595	9,511
Total	$ 9,563	$ 9,554	$ 8,681	$ 9,607

All financial instruments in the table above are classified as Level 2. There were no transfers between Level 1 and Level 2 for any of our financial instruments during the years ended 31 December 2018 and 2017.

5 Business Combination.

On 21 August 2018, through an indirect wholly owned subsidiary, we acquired all of the outstanding common stock of A. Schulman Inc., a Delaware corporation for an aggregate purchase price of approximately $1,940 million, including a $1,240 million cash payment to the former common stock holders, $594 million for the repayment of A. Schulman debt and $106 million for the settlement of stock-based compensation plans and other purchase consideration. As of 31 December 2018, there has been no material changes in the purchase consideration.

The acquisition of A. Schulman, a global supplier of high-performance plastic compounds, composites and powders, builds upon our already existing platform in this space, allowing us to create our Advanced Polymers Solutions business with broad geographic reach, leading technologies and a diverse product portfolio.

Preliminary Purchase Price Allocation—The following table summarizes the allocation of the purchase price based on the fair value of the assets acquired and liabilities, redeemable non-controlling interests and non-controlling interests assumed on the acquisition date.

Millions of U.S. dollars		
Cash and cash equivalents	$	71
Restricted cash		10
Accounts receivable		407
Prepaid expenses and other current assets		100
Inventories		300
Property, plant and equipment		448
Equity investments		16
Goodwill		1,271
Intangible assets		505
Other assets		58
Total assets	$	3,186
Current maturities of long-term debt	$	397
Accounts payable		317
Accrued liabilities		109
Other liabilities		164
Redeemable non-controlling interests		125
Deferred income taxes		112
Total liabilities		1,224
Non-controlling interests		22
Total liabilities, redeemable non-controlling interests and non-controlling interests	$	1,246
Total net assets acquired	$	1,940

In determining the fair value, we utilized various forms of the income, cost and market approaches depending on the asset or liability being fair valued, primarily using Level 3 inputs. The estimation of fair value required significant judgment related to future net cash flows (including net sales, cost of products sold, selling and marketing costs, and working capital/contributory asset charges), discount rates reflecting the risk inherent in each cash flow stream, competitive trends, market comparisons and other factors. Inputs were generally determined by taking into account historical data, supplemented by current and anticipated market conditions, and growth rates.

The primary areas of the preliminary purchase price allocation that have not been finalized relate to the fair value of property, plant and equipment, investments, intangible assets, contingencies and the related impacts on deferred income taxes and cumulative translation adjustments.

Inventories—The acquired inventory of $300 million comprises $180 million of finished goods, $8 million of work-in-process and $112 million of raw materials and supplies. Fair value of finished goods was based on the estimated selling price of finished goods on hand less costs to sell, including disposal and holding period costs, and a reasonable profit margin on the selling and disposal effort for each specific category of finished goods being evaluated. Fair value of work in process was based on the estimated selling price once completed less total costs to complete the manufacturing process, costs to sell including disposal and holding period costs, a reasonable profit margin on the remaining manufacturing, selling, and disposal effort. Raw materials were valued based on current replacement cost.

Other Current Assets and Current Liabilities—Due to the short maturity of these assets and liabilities, their fair values closely approximate their carrying values; therefore, their fair values are deemed to be their respective carrying values.

The gross contractual amount of the receivables presented in the table above is $415 million.

Property, Plant and Equipment—The fair value of the components of property, plant and equipment acquired are represented in the table below:

Millions of U.S. dollars		
Land	$	56
Major manufacturing equipment		211
Buildings		141
Light equipment and instrumentation		13
Office furniture		9
Information system equipment		2
Construction in progress		16
Total	$	448

Fair value for the acquired property, plant and equipment was determined using two valuation methods: the market approach and the replacement cost approach. The market approach represents a sales comparison that measures the value of an asset through an analysis of sales and offerings of comparable assets. The replacement cost approach measures the value of an asset by estimating the cost to acquire or construct comparable assets adjusted for the age and condition of the asset.

Goodwill—Goodwill represents the excess of consideration over the net fair value of the acquired assets and liabilities, redeemable non-controlling interest and non-controlling interest assumed. The acquisition resulted in $1,271 million of goodwill most of which will not be deductible for tax purposes. The goodwill recognized in this transaction largely consists of the acquired workforce and expected synergies resulting from the acquisition. Cost synergies will be achieved through a combination of workforce consolidations, savings from procurement synergies, optimizing warehouse and logistic footprints, implementing systems and processes best practices and leveraging existing research and development knowledge management systems. All of the goodwill was assigned to our APS segment.

Intangible Assets—The fair value, weighted average useful life and useful life of each class of intangible asset acquired are presented in the following table:

Millions of U.S. dollars		Fair Value	Weighted Average Life (Years)	Useful Life (Years)
Customer relationships	$	300	15	15
Trade name and trademarks		104	5	5
Know-how		84	8	5-8
Various contracts		17	1	1-2
Total	$	505		

Know-how in the table above represents formulations, know-how and trade secrets associated with manufacturing processes.

The fair values of know-how and trade name and trademarks were determined using the relief from royalty method. The excess earnings method was used to determine the fair value of customer relationships. These methods are all variations of the income approach.

The total weighted-average life of the acquired intangible assets that are subject to amortization is 11 years.

Other Assets and Other Liabilities—Other assets include deferred tax assets and pension assets while other liabilities are primarily related to pension and other postretirement benefit plans.

Long-Term Debt—In August 2018, we notified bondholders that we would call the assumed $375 million 6.875% Senior Notes due June 2023 at a price of 105.156% of par. In conjunction with the repayment of the debt in September 2018, we paid a make-whole premium of $19 million. These notes were recognized at redemption value which approximates fair value at the acquisition date.

Redeemable Non-controlling Interests—Our redeemable non-controlling interests relate to 124,347 shares of cumulative perpetual special stock issued by our consolidated subsidiary, A. Schulman, Inc. ("A. Schulman Special Stock"). Holders of A. Schulman Special Stock are entitled to receive cumulative dividends at the rate of 6% per share on the liquidation preference of $1,000 per share. These shares may be redeemed at any time at the discretion of the holders and are classified as current liability on the balance sheet. In 2018, 8,973 shares of A. Schulman Special Stock were redeemed for approximately $9 million. As of 31 December 2018, 115,374 shares of A. Schulman Special Stock were outstanding.

At the acquisition date, the fair value was estimated using the Black Derman Toy binomial lattice technique, which models the decision to redeem or hold by considering the maximum of the redemption value and the hold value throughout the term of the instrument and chooses the action that maximizes the return to the holder. This model requires assumptions on credit spread, yield volatility and risk-free rates.

Acquisition Costs—We incurred approximately $30 million of acquisition-related transaction costs in connection with the acquisition of A. Schulman during the year ended 31 December 2018. These costs comprising banker, legal and consulting fees were classified in our Consolidated Statements of Income for the year ended 31 December 2018, as selling, general and administrative expenses.

Pro forma Information—Our Consolidated Financial Statements include the operating results of A. Schulman from 21 August 2018 to 31 December 2018, including revenues of $846 million and income from continuing operations before income taxes of $6 million. Pro forma results of operations for this acquisition have not been presented because the effects of the acquisition were not material to our pre-acquisition financial results.

6 Revenue

We adopted IFRS 15, Revenue from contracts with customers, on 1 January 2018. The adoption resulted in an $18 million adjustment to the beginning retained earnings balance for the cumulative effect of initially applying the new standard. For further information related to the adoption of the new standard, see Note 2 to the Consolidated Financial Statements.

Contract Balances—Our contract liabilities were $138 million as of December 31, 2018. Revenue recognized in the reporting period included in the contract liability balance at the beginning of the period was immaterial.

Disaggregation of Revenues—We participate globally across the petrochemical value chain and are an industry leader in many of our product lines. Our chemical 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 refining business consists of our Houston refinery, which processes crude oil into refined products such as gasoline, diesel and jet fuel.

Revenues disaggregated by key products are summarized below:

Millions of U.S. dollars	2018	2017
Sales and other operating revenues:		
Olefins & co-products	$ 3,679	$ 4,304
Polyethylene	7,444	7,372
Polypropylene	5,824	5,104
PO & derivatives	2,531	2,204
Oxyfuels and related products	3,399	3,022
Intermediate chemicals	3,091	2,139
Compounding and solutions	934	788
Advanced polymers	3,415	3,051
Refined products	8,221	6,165
Other	595	443
Total	$ 39,133	$ 34,592

Compounding and solutions revenues include the product portfolio from the A. Schulman acquisition and legacy polypropylene compounding. Polybutene-1 and *Catalloy* revenues are now reflected in our new advanced polymers revenue stream. To reflect this change, polypropylene compounding and *Catalloy* have been recasted from the polypropylene product line to the compounding and solutions and advanced polymers respectively for the periods presented. Additionally, polybutene-1 has been moved from other revenues to advanced polymers

The following table presents our revenues disaggregated by geography, based upon the location of the customer:

Millions of U.S. dollars	2018	2017
Sales and other operating revenues:		
United States	$ 18,671	$ 16,618
Germany	2,949	2,746
Italy	1,582	1,352
France	1,460	1,306
Mexico	2,308	1,504
Japan	1,257	1,185
China	1,137	1,024
The Netherlands	1,050	1,069
Other	8,719	7,788
Total	$ 39,133	$ 34,592

Transaction Price Allocated to the Remaining Performance Obligations—We have elected to exclude contracts which have an initial term of one year or less from this disclosure. Our contracts with customers are commodity supply arrangements that settle based on market prices at future delivery dates; therefore, transaction prices are entirely variable. Transaction prices are known at the time revenue is recognized since they are generally determined by the commodity price index at a specific date, at month-end or at the month average once products are shipped to our customers. Future estimates of transaction prices for disclosure purposes are substantially constrained as they are highly susceptible to factors outside our influence, including volatility in commodity markets, industry production capacities and operating rates, planned and unplanned industry operating interruptions, foreign exchange rates and worldwide geopolitical trends.

7 Expenses by Nature

Millions of U.S. Dollars	Note	2018	2017
Change in inventories of finished goods and work in progress		$ 128	$ 506
Raw materials and utilities		26,920	22,141
Employee benefit expense	8	2,651	2,397
Depreciation, amortization, and impairment charges	15/16	1,285	1,226
Distribution expenses		1,396	1,278
Other expenses		1,501	1,215
Total cost of sales, selling costs, and administration expenses		$ 33,881	$ 28,763

8 Employee Benefit Expenses

Millions of U.S. Dollars	Note	2018	2017
Wages and salaries		$ 2,025	$ 1,771
Social security		310	285
Share based compensation granted to directors and employees	9	39	55
Pension costs - defined benefit obligations	28	111	113
Pension costs - defined contribution obligations		53	68
Other post-employment benefits - defined benefit obligations	28	14	15
Other employee benefits		99	90
Total cost of employee benefits		$ 2,651	$ 2,397

9 Share-Based Compensation Granted to Directors and Employees

We are authorized to grant restricted stock units, stock options, performance share units, and other cash and stock awards under our Long-Term Incentive Plan ("LTIP"). The Compensation Committee determines the recipients of the equity awards, the type of awards, the required performance measures, and the timing and duration of each grant. The maximum number of shares of our common stock reserved for issuance under the LTIP is 22,000,000. As of 31 December 2018, there were 4,992,577 shares remaining available for issuance assuming maximum payout for performance share units awards. When options are exercised and awards are paid out shares are issued from our treasury shares.

Total share-based compensation expense and the associated tax benefits are as follows for the years ended 31 December:

Millions of U.S. Dollars	2018	2017
Compensation expense:		
Restricted stock units	$ 15	$ 13
Stock options	7	7
Performance share units	17	35
	$ 39	$ 55
Tax benefit:		
Restricted stock units	$ 4	$ 5
Stock options	2	2
Performance share units	4	12
	$ 10	$ 19

Restricted Stock Unit Awards ("*RSUs*")—RSUs generally entitle the recipient to be paid out an equal number of ordinary shares on the third anniversary of the grant date. RSUs, which are subject to customary partial or accelerated vesting or forfeiture in the event of certain termination events, are accounted for as an equity award with compensation cost recognized in the Consolidated Statement of Income ratably over the vesting period.

In 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 all RSUs are entitled to dividend equivalents settled in the form of cash payments to the holder no later than 15 March, following the year the dividends are paid, as long as the participant remains employed at the time of the dividend payment. See the "Dividend Distribution" section of Note 24 for the per share amount of dividend equivalent payments made to the holders of RSUs during 2018 and 2017. Total dividend equivalent payments were $2 million and $1 million for 2018 and 2017, 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 31 December 2018 and 2017 was $108.52 and $91.14, respectively. The total fair value of RSUs vested during 2018 and 2017 was $13 million and $8 million, respectively.

The following table summarizes RSU activity for the years ended 31 December:

	2018		2017	
	Number of Units (in thousands)	Weighted Average Granted Fair Value (Per Share)	Number of Units (in thousands)	Weighted Average Granted Fair Value (Per Share)
Outstanding at 1 January	377	$ 85.17	295	$ 79.03
Granted	213	108.52	205	91.14
Vested	(115)	84.27	(95)	78.97
Forfeited	(13)	101.67	(28)	85.20
Outstanding at 31 December	462	$ 95.69	377	$ 85.17

As of 31 December 2018, the unrecognized compensation cost related to RSUs was $21 million, which is expected to be recognized over a weighted average period of 2 years.

Stock Option Awards ("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 awards generally have a three-year vesting period that vests in equal increments on the first, second, and third anniversary of the grant date. The awards have a contractual term of ten years, subject to customary partial or accelerated vesting or forfeiture in the event of certain termination events. The Stock Options are accounted for as equity awards with compensation cost recognized using the graded vesting method.

In 2015, 457,555 Stock Options were granted to the CEO 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 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 our historical 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).

In 2010, when the majority of our options were granted, we did not possess exercise patterns similar to our situation. The option grants that have been made since 2010 have been limited in number and have occurred during periods of substantial share price volatility. As historical data about employees' exercise behavior is limited, the expected term of all options granted is an estimate based on a weighted average expected option life for the entire participant group. The resulting expected weighted average life of the options granted is the mid-point between the vesting date and the contractual term of the options.

Weighted average fair values of Stock Options granted in each respective year and the assumptions used in estimating those fair values are as follows:

	2018	2017
Weighted average fair value:	$ 21.58	$ 21.55
Fair value assumptions:		
Dividend yield	4.0%	4.0%
Expected volatility	27.8-29.0%	34.9-35.1%
Risk-free interest rate	2.6-2.9%	2.10-2.29%
Weighted average expected term, in years	6.0	6.0

The following table summarizes stock option activity for the years ended 31 December:

	Number of Shares (in thousands)	Weighted Average Exercise Price	Weighted Average Remaining Term	Aggregate Intrinsic Value (Millions of U.S. Dollars)
Outstanding at 1 January 2017	927	$ 74.19	—	$ —
Granted	313	92.73	—	—
Exercised	(134)	44.76	—	—
Forfeited	(45)	83.34	—	—
Expired	(42)	84.57	—	—
Outstanding at 31 December 2017	1,019	$ 82.93	7.6 years	$ 28
Exercisable at 31 December 2017	324	$ 78.47	6.3 years	$ 10
Outstanding at 1 January 2018	1,019	82.93	—	—
Granted	336	109.03	—	—
Exercised	(64)	69.36	—	—
Forfeited	(9)	100.91	—	—
Expired	(1)	109.09	—	—
Outstanding at 31 December 2018	1,281	$ 90.30	7.4 years	$ 4
Exercisable at 31 December 2018	557	$ 83.00	6.5 years	$ 3

The range of exercise prices for Stock Options outstanding at the end of 31 December 2018 and 2017 was $13.11 to $113.39 and $13.11 to $113.03, respectively.

The aggregate intrinsic value of Stock Options exercised during the years ended 31 December 2018 and 2017 was $3 million and $6 million, respectively.

As of 31 December 2018, the unrecognized compensation cost related to Stock Options was $5 million, which is expected to be recognized over a one-year period. During 2018, cash received from exercise of Stock Options was $4 million. There was $1 million tax benefit associated with these exercises.

Performance Share Units Awards ("PSUs")—PSUs are granted under the LTIP and have three-calendar year performance periods. They are granted in the beginning of each performance period, provide a target number of share units, and ultimately payout between 0% and 200% of target. Each unit is equivalent to one share of our common stock. These share awards are subject to customary partial or accelerated vesting or forfeiture in the event of certain termination events.

For PSUs granted beginning in 2017, the final number of shares payable is determined after the performance period based on the relative Total Shareholder Return ("TSR"). TSR is an objective calculation that takes into account LYB's TSR rank within a peer group established by the Compensation Committee and whether LYB's specific TSR is positive or negative. Since the final payout is based on objective criteria established at the grant date, the awards are treated as equity awards. Compensation expense during the three-calendar year performance period is accrued on a straight-line basis. PSUs are valued using a Monte-Carlo simulation payout value on grant date.

For PSUs granted prior to 2017, the final number of shares payable is determined at the end of the performance period by the Compensation Committee based on criteria established at the beginning of the performance period. 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 performance period is accrued on a straight-line basis subject to fair value adjustments. PSUs granted prior to 2017 are valued at market price of the underlying stock on the date of payment.

For PSUs granted beginning in 2016 accrue dividend equivalent units. These dividend equivalent units will be converted to shares upon payment at the end of the performance period and are classified in Accrued and Other liabilities on the Consolidated Balance Sheets. Dividend equivalent units for PSUs granted in 2016 are recorded in compensation expense while PSUs granted beginning in 2017 are recorded in Retained earnings.

The following table summarizes PSU activity for the years ended 31 December:

	2018		2017	
	Number of Units (in thousands)	Weighted Average Grant Date Fair Value (per share)	Number of Units (in thousands)	Weighted Average Grant Date Fair Value (per share)
Outstanding at 1 January	224	$ 93.28	—	$ —
Granted	219	89.32	237	93.28
Forfeited	(13)	91.36	(13)	93.28
Outstanding at 31 December	430	$ 91.33	224	$ 93.28

The assumptions used in the Monte Carlo simulation to estimate the fair value of PSUs granted in 2018 and 2017 are as follows:

	2018	2017
Expected volatility of LyondellBasell N.V. common stock	27.15%	30.98%
Expected volatility of peer companies	17.45-42.99%	16.98-39.89%
Average correlation coefficient of peer companies	0.50	0.51
Risk-free interest rate	2.40%	1.46%

As of 31 December 2018, the unrecognized compensation cost related to PSUs assuming target payout was $21 million, which is expected to be recognized over a weighted average period of two years.

The weighted average grant date fair value for PSUs classified as liability awards earned and issued during the years ended 31 December 2018 and 2017 was $109.09 and $92.69 respectively. The total fair value of PSUs vested during 2018 and 2017 was $25 million and $21 million, respectively.

Employee Stock Purchase Plan

We have an Employee Share Purchase Plan ("ESPP") which includes a 10% discount and look-back provision. These provisions allow participants to purchase our stock at 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.

10 Directors' Remuneration

Since its incorporation in 2010, the Company was managed under a dual board structure, consisting of a Supervisory Board and a Management Board. Members of the Supervisory Board were non-executives and members of the Management Board were executive officers of the Company. Beginning on 1 June 2018, the Company transitioned to a unitary board structure and is managed by the Board of Directors consisting of non-executive directors and at least one executive director, including our Chief Executive Officer.

Executive Director Remuneration

Mr. Patel is the sole executive member of our Board of Directors. He receives a base salary, annual bonus, and grants of share-based awards under the Company's Long-Term Incentive Plan. The share-based awards include performance share units (PSUs), stock options, and restricted stock units (RSUs). Information on these awards can be found in Note 9, Share-Based Compensation Granted to Directors and Employees.

The following table summarizes the compensation expense recorded in our Financial Statements associated with Mr. Patel for the years ended 31 December 2018 and 2017.

Thousands U.S. Dollars	Salary	Share Based Compensation (1)	Short Term Incentives (2)	Pension Service Cost	All other Compensation (3)	Total
2018	$ 1,574	$ 10,328	$ 5,896	$ 13	$ 271	$ 18,082
2017	$ 1,500	$ 13,634	$ 3,958	$ 11	$ 386	$ 19,489

(1) Share based compensation expense represents costs which are recognized over the vesting period of stock options, restricted stock units and performance share units

(2) Short term incentives represent annual bonuses paid for performance. The target annual bonus, set as a percentage of base salary, is multiplied by the payout for corporate-wide results. The payout for corporate-wide results range from 0 to 200% and is based on (i) health, safety and environmental performance; (ii) business results (earnings before interest, taxes, depreciation and amortization); and (iii) cost discipline. The corporate wide results paid out at 180% of target for 2018 and 132% of target for 2017. In 2017, Mr. Patel's bonus was multiplied by a personal factor of 1.4 to reflect his individual contributions to Company performance.

(3) Amounts included in "All Other Compensation" in the table above include Company 401(k) matching contributions and pension plan contributions; Company contributions under the Company's U.S. Senior Management Deferral Plan; Company reimbursement, and gross-up on that reimbursement, of state taxes owed for work performed by Mr. Patel in those states on behalf of the Company; executive physicals; payment of professional fees for tax filings; payment of business club memberships and dues; and financial planning allowances. Amounts for 2017 also include reimbursement, on an after-tax basis, of the cost of settlements related to IRS audits of tax year 2012 challenging the tax treatment under Section 409A of the Internal Revenue Code of equity awards granted to Mr. Patel.

The following tables show the equity compensation activity for Mr. Patel during 2018:

Overview of stock options

Year of Issue	Out-Standing at 1 Jan 2018	In 2018 Granted	Exercised	Forfeited/ Expired	Out-standing at 31 Dec 2018	Vested in 2018	Exercise price (USD)	Expiration Date
2014	2,418	—	—	—	2,418	—	85.80	20/02/2024
2015	70,211	—	—	—	70,211	23,403	89.94	17/02/2025
2015	227,058	—	—	—	227,058	56,764	76.15	12/01/2025
2016	101,108	—	—	—	101,108	33,702	77.93	16/02/2026
2017	130,572	—	—	—	130,572	43,524	92.69	16/02/2027
2018	—	136,656	—	—	136,656	—	109.09	21/02/2028
Total	531,367	136,656	—	—	668,023	157,393		

Overview of restricted stock units

Year of Issue	Outstanding at 1 Jan 2018	In 2018 Granted	Vested	Forfeited	Outstanding at 31 Dec 2018	Share price at grant date (USD)
2015	19,110	—	19,110	—	—	89.94
2015	70,913	—	23,638	—	47,275	76.15
2016	26,066	—	—	—	26,066	77.93
2017	30,344	—	—	—	30,344	92.69
2018	—	27,071	—	—	27,071	109.09
Total	146,433	27,071	42,748	—	130,756	

Overview of performance share units

Year of Issue	Outstanding at 1 Jan 2018	In 2018 Granted	Vested	Forfeited	Dividend[1]	Outstanding at 31 Dec 2018	Share Price at grant date (USD)
2015 [2]	38,220	7,644	45,864	—	—	—	89.94
2016	56,349	—	—	—	2,250	58,599	77.93
2017	60,687	—	—	—	—	60,687	92.69
2018	—	54,142	—	—	—	54,142	109.09
Total	155,256	61,786	45,864	—	2,250	173,428	

(1) The PSUs granted in 2016 include dividend equivalent units, in the form of additional PSUs. PSUs granted in 2017 and 2018 received $7.55 and $4.00, respectively, of accumulated dividend equivalents per outstanding unit and accrued which will be converted to additional PSUs at the end of the performance period ending 31 December 2019 and 2020 subject to the same terms and conditions as the original award.

(2) Performance share units earned and vested in the first quarter of 2018 were in excess of the target for the PSUs awarded in 2015 with a performance period ended 31 December 2017.

Non-Executive Director Remuneration

Non-executive members of our Board of Directors receive cash compensation and equity compensation, in the form of restricted stock units, for their service on the Board and its committees. Additionally, Directors can elect to receive the cash component of their compensation in Company shares. The compensation program for our non-executive Directors is shown in the table below.

Annual retainer:	
Cash	$115,000 ($325,000 for Chairman of the Board)
Restricted stock units	Valued at $170,000 ($325,000 for Chairman of the Board)
Committee retainer:	
Members	$10,000 ($15,000 for Audit Committee)
Chairs	$20,000 ($27,500 for Audit and Compensation Chair)
Travel fees	$5,000 for each intercontinental round trip

The following table summarizes the compensation expense recorded in our Financial Statements associated with the non-executive members of the Board of Directors for the years ended 31 December 2018 and 2017.

	2018				2017			
Thousands of U.S. Dollars	Fees Earned or Paid in Cash (1)	Stock Compen-sation (2)	All Other Compen-sation (3)	Total	Fees Earned or Paid in Cash (1)	Stock Compen-sation (2)	All Other Compen-sation (3)	Total
Jacques Aigrain								
Chairman of the Board	$ 277	$ 194	$ 10	$ 481	$ 153	$ 170	$ 5	$ 328
Lincoln Benet	145	166	5	316	145	170	5	320
Jagjeet S. Bindra	150	166	27	343	150	170	21	341
Robin W. T. Buchanan	135	166	5	306	—	316	—	316
Stephen F. Cooper	—	309	2	311	—	321	3	324
Nance K. Dicciani	—	315	2	317	—	331	1	332
Claire S. Farley	150	166	17	333	—	347	1	348
Isabella D. Goren	140	166	27	333	140	170	21	331
Michael Hanley(4)	7	13	—	20	—	—	—	—
Bruce A. Smith	—	330	2	332	—	350	1	351
Rudy M. J. van der Meer	135	166	4	305	135	170	6	311
Former Director								
Robert G. Gwin (5)	196	431	22	649	215	309	18	542

(1) Includes retainers for services earned or paid through 31 December 2018 and 2017. Mr. Cooper, Mr. Smith and Ms. Dicciani each elected to receive the cash component of their 2018 compensation in the form of shares of our stock. For 2017, Mr. Buchanan, Mr. Cooper, Mr. Smith, Ms. Dicciani and Ms. Farley each elected to receive their cash compensation in the form of shares of our stock.

(2) Represents annual grants of RSUs for all directors and shares of stock issued in lieu of cash compensation. The annual grants of RSUs are made in conjunction with the Board's regularly scheduled meeting in May each year. Mr. Aigrain received an additional pro-rated RSU grant in November 2018, representing additional compensation for his service as Chairman paid retroactive to his assumption of the role of Vice Chair on 1 June 2018. The terms of the RSUs provide for cash dividend equivalent payments when dividends are paid on the Company's shares. In 2018, the annual grant for each director other than Mr. Aigrain, Mr. Gwin, the prior Chairman of the Board, and Mr. Hanley was 1,517 shares. Mr. Aigrain and Mr. Gwin received 3,179 shares and 2,765 shares, respectively. Mr. Hanley received a pro-rata RSU grant of 914 shares upon his appointment to the Board in November 2018. These awards, which vest one year from the date of grant (on 31 May 2019 for all directors other than Mr. Hanley, whose award vests on 31 November 2019), are the only stock awards outstanding at 2018 fiscal year-end for the Board of Directors. In 2017, the annual grant for each director was 2,110 shares. Mr. Gwin received an additional 1,738 shares as Chairman of the Board. The grant date fair value of the awards is the number of units granted times the fair market value of our shares on that date. See Note 9 to the Consolidated Financial Statements for a description of the accounting for equity-based compensation.

The shares received in lieu of cash compensation are issued at the same time quarterly cash payments for retainers and travel fees are otherwise made. The number of shares issued is based on the average of the closing prices of the Company's shares over the quarter in which the compensation was earned. For 2018, the shares issued in lieu of cash compensation were as follows: Mr. Cooper - 1,439 shares; Ms. Dicciani - 1,507 shares; Mr. Smith - 1,657 shares and Mr. Hanley - 68 shares. For 2017, the shares issued in lieu of cash compensation were as follows: Mr. Buchanan - 1,534 shares; Mr. Cooper - 1,587 shares; Ms. Dicciani - 1,697 shares; Ms. Farley - 1,861 shares and Mr. Smith - 1,888 shares.

(3) Includes $5,000 for each intercontinental trip taken for work performed for the Company, other than for Mr. Cooper, Ms. Dicciani and Mr. Smith in 2018 and Mr. Buchanan, Mr. Cooper, Ms. Dicciani, Ms. Farley and Mr. Smith in 2017, each of whom received shares as compensation for their travel fees. Also includes benefits in kind related to tax preparation and advice related to the directors' UK and Dutch tax returns and payments. The Company provides these services, through a third party, to the member of the Board because of our unique incorporation and tax domicile situation.

(4) Mr. Hanley was appointed to the Board in November 2018.

(5) Mr. Gwin retired in November 2018. Pursuant to the terms of his RSU award, the Board exercised its discretion to accelerate the vesting of Mr. Gwin's outstanding RSUs.

Management Board Remuneration

The executives who, in addition to Mr. Patel, served as members of the Management Board prior to the Company's transition to a unitary board structure on 1 June 2018 received salaries, annual bonuses, and grants of share-based awards under the Company's Long-Term Incentive Plan. The share-based awards include stock options, restricted stock units and performance share units. These compensation amounts are recognized by the Company over the periods in which the awards are earned. Information on these awards can be found in Note 9, Share-Based Compensation Granted to Directors and Employees.

The following table summarizes the compensation expense recorded in our Financial Statements associated with the Management Board members for the five months ended 1 June 2018 and year ended 31 December 2017.

Thousands U.S. Dollars	Salary	Share Based Compensation (1)	Short Term Incentives (2)	Pension Service Cost	All other Compensation (3)	Total
2018						
Thomas Aebischer	$ 318	$ 737	$ 526	$ 5	$ 39	$ 1,625
Daniel Coombs	283	635	558	5	33	1,514
James Guilfoyle	202	261	315	7	25	810
Jeffrey A. Kaplan	250	475	439	5	29	1,198
2017						
Thomas Aebischer	$ 741	$ 2,376	$ 1,051	$ 12	$ 78	$ 4,258
Kevin W Brown	98	720	—	4	1,073	1,895
Daniel Coombs	645	1,612	969	12	71	3,309
James Guilfoyle	416	604	473	15	45	1,553
Jeffrey A. Kaplan	548	1,409	610	11	60	2,638

(1) Share based compensation expense represents costs which are recognized over the vesting period of stock options, restricted stock units and performance share units.

(2) Short term incentives represent annual bonuses paid for performance. Each individual's target annual bonus, set as a percentage of base salary, is multiplied by the payout for corporate-wide results and then multiplied by a personal performance modifier. The payout for corporate-wide results range from 0 to 200% based on (i) health, safety and environmental performance; (ii) business results (earnings before interest, taxes, depreciation and amortization); and (iii) cost discipline. The corporate wide results paid out at 180% of target for 2018 and 132% of target for 2017. Personal performance factors range from 0 to 1.5 and reflect individual contributions to Company performance, whether the individual met or exceeded expectations for the role, and any other significant factors during the year. The 2017 personal performance factors for each member of the Management Board were: Mr. Aebischer - 1.1; Mr. Coombs - 1.3; Mr. Guilfoyle - 1.0; and Mr. Kaplan - 1.2. The 2018 personal performance factors for each member of the Management Board were as follows: Mr. Aebischer - 1.1; Mr. Coombs - 0.8; Mr. Guilfoyle - 1.5; and Mr. Kaplan - 1.1.

(3) Amounts included in "All Other Compensation" in the table above include Company contributions to the defined contribution plans; matching contributions under the Company's Deferral Plan; executive physicals; payment of professional fees for tax filings and financial planning allowances.

The following tables show the equity compensation activity for members of the Management Board during 2018:

Overview of stock options

			In 2018						
	Year of Issue	Out-Standing at 1 Jan 2018	Granted	Exercised	Forfeited/ Expired	Out-standing at 1 June 2018	Vested in 2018	Exercise price (USD)	Expiration Date
Thomas	2016	27,066	—	—	—	27,066	9,022	77.93	16/02/2026
Aebischer	2016	26,042	—	—	—	26,042	8,680	86.90	01/01/2026
	2017	26,868	—	—	—	26,868	8,956	92.69	16/02/2027
	2018	—	27,585	—	—	27,585	—	109.09	21/02/2028
Total		79,976	27,585	—	—	107,561	26,658		
Daniel	2015	4,871	—	—	—	4,871	1,623	101.10	29/05/2025
Coombs	2016	16,427	—	—	—	16,427	5,475	77.93	16/02/2026
	2017	22,981	—	—	—	22,981	7,661	92.69	16/02/2027
	2018	—	24,617	—	—	24,617	—	109.09	21/02/2028
Total		44,279	24,617	—	—	68,896	14,759		
James	2012	1,598	—	—	—	1,598	—	44.00	28/02/2022
Guilfoyle	2013	1,220	—	—	—	1,220	—	60.51	12/02/2023
	2014	914	—	—	—	914	—	85.80	20/02/2024
	2015	1,205	—	—	—	1,205	401	89.94	17/02/2025
	2015	347	—	—	—	347	115	101.43	01/06/2025
	2016	5,667	—	—	—	5,667	1,889	77.93	16/02/2026
	2017	9,148	—	—	—	9,148	3,050	92.69	16/02/2027
	2018	—	11,651	—	—	11,651	—	109.09	21/02/2028
Total		20,099	11,651	—	—	31,750	5,455		
Jeffrey A.	2010	813	—	—	—	813	—	13.11	30/04/2020
Kaplan	2015	6,205	—	—	—	6,205	2,068	89.94	17/02/2025
	2015	2,857	—	—	—	2,857	952	101.79	07/05/2025
	2016	12,675	—	—	—	12,675	4,225	77.93	16/02/2026
	2017	14,304	—	—	—	14,304	4,768	92.69	16/02/2027
	2018	—	16,396	—	—	16,396	—	109.09	21/02/2028
Total		36,854	16,396	—	—	53,250	12,013		

Overview of restricted stock units

	Year of Issue	Outstanding at 1 Jan 2018	In 2018 Granted	Vested	Forfeited	Outstanding at 1 Jun 2018	Share price at grant date (USD)
Thomas Aebischer	2016	6,978	—	—	—	6,978	77.93
	2016	6,904	—	3,452	—	3,452	86.90
	2017	6,244	—	—	—	6,244	92.69
	2018	—	5,465	—	—	5,465	109.09
Total		20,126	5,465	3,452	—	22,139	
Daniel Coombs	2015	1,287	—	1,287	—	—	101.10
	2016	4,235	—	—	—	4,235	77.93
	2017	5,341	—	—	—	5,341	92.69
	2018	—	6,408	—	—	6,408	109.09
Total		10,863	6,408	1,287	—	15,984	
James Guilfoyle	2013	446	—	446	—	—	60.51
	2015	328	—	328	—	—	89.94
	2015	92	—	92	—	—	101.43
	2016	1,461	—	—	—	1,461	77.93
	2017	2,126	—	—	—	2,126	92.69
	2018	—	2,308	—	—	2,308	109.09
Total		4,453	2,308	866	—	5,895	
Jeffrey A. Kaplan	2015	1,689	—	1,689	—	—	89.94
	2015	761	—	761	—	—	101.79
	2016	3,268	—	—	—	3,268	77.93
	2017	3,324	—	—	—	3,324	92.69
	2018	—	5,999	—	—	5,999	109.09
Total		9,042	5,999	2,450	—	12,591	

Overview of performance share units

	Year of Issue	Outstanding at 1 Jan 2018	In 2018 Granted	Vested	Forfeited	Dividend[1]	Outstanding at 1 Jun 2018	Share Price at grant date (USD)
Thomas Aebischer	2016	15,087	—	—	—	603	15,690	77.93
	2017	12,488	—	—	—	—	12,488	92.69
	2018	—	10,929	—	—	—	10,929	109.09
Total		27,575	10,929	—	—	603	39,107	
Daniel Coombs	2015 [2]	2,573	515	3,088	—	—	—	101.10
	2016	9,158	—	—	—	367	9,525	77.93
	2017	10,681	—	—	—	—	10,681	92.69
	2018	—	9,753	—	—	—	9,753	109.09
Total		22,412	10,268	3,088	—	367	29,959	
James Guilfoyle	2015 [2]	656	132	788	—	—	—	89.94
	2015 [2]	184	37	221	—	—	—	101.43
	2016	3,161	—	—	—	128	3,289	77.93
	2017	4,252	—	—	—	—	4,252	92.69
	2018	—	4,616	—	—	—	4,616	109.09
Total		8,253	4,785	1,009	—	128	12,157	
Jeffrey A. Kaplan	2015 [2]	3,378	676	4,054	—	—	—	89.94
	2015 [2]	1,522	305	1,827	—	—	—	101.79
	2016	7,068	—	—	—	284	7,352	77.93
	2017	6,648	—	—	—	—	6,648	92.69
	2018	—	6,496	—	—	—	6,496	109.09
Total		18,616	7,477	5,881	—	284	20,496	

[1] The PSUs granted in 2016 include dividend equivalent units, in the form of additional PSUs. PSUs granted in 2017 and 2018 received $7.55 and $4.00, respectively, of accumulated dividend equivalents per outstanding unit and accrued which will

be converted to additional PSUs at the end of the performance period ending 31 December 2019 and 2020 subject to the same terms and conditions as the original award.

(2) Performance share units earned and vested in the first quarter of 2018 were in excess of the target for the PSUs awarded in 2015 with a performance period ended 31 December 2017.

11 Other (Income) Expense, Net

Millions of U.S. Dollars	2018	2017
(Gains)/losses on financial derivatives	$ (107)	$ 287
(Gains)/losses on foreign exchange	(20)	(134)
(Gains)/losses on sale of investment	(38)	(105)
Other	(3)	(81)
Other (income) expense, net	$ (168)	$ (33)

(Gains)/losses on financial derivatives—The amounts reported as losses on financial derivatives in 2018 and 2017 are related to our cross-currency swaps.

(Gains)/losses on sale of investments—In October 2018, we received net cash proceeds of $37 million, upon the sale of our wholly owned, carbon black subsidiary in France. The net cash proceeds is reflected in Cash flows from investing activities in the Consolidated Statement of Cash Flows. In connection with the sale, we recognized a gain of $36 million, which is reflected in Other Income.

Upon the sale of our 27% ownership interest in Geosel in September 2017, we received net proceeds of $155 million, which is reflected in Cash flows from investing activities in the Consolidated Statement of Cash Flows. In connection with the sale, we recognized a gain of $105 million, which is reflected in Other Income.

12 Finance Costs

Millions of U.S. Dollars	2018	2017
Interest expense on borrowings	$ 331	$ 489
Provisions for unwinding of discount	1	2
Foreign exchange (gain) loss from borrowings and cash	98	(132)
Other	6	4
Total finance costs	$ 436	$ 363

13 Income Tax Expense

LyondellBasell Industries N.V. is tax resident in the United Kingdom pursuant to a mutual agreement procedure determination ruling between the Dutch and United Kingdom competent authorities and therefore subject solely to the United Kingdom corporate income tax system.

Through our subsidiaries, we have substantial operations world-wide and earn significant income in the U.S. Taxes are primarily paid on the earnings generated in various jurisdictions, including the U.S., The Netherlands, Germany, France, Italy and other countries. LyondellBasell Industries 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.

We monitor income tax developments in countries where we conduct business. In 2017, the U.S. enacted "H.R.1," also known as the "Tax Cuts and Jobs Act" (the "Tax Act"), materially impacting our Consolidated Financial Statements by, among other things, the decreasing tax rate and significantly affecting future periods. The Tax Act reduced the federal corporate tax rate from 35% to 21% for years beginning after 2017, which resulted in the remeasurement of our U.S. net deferred income tax liabilities. As a result, we recognized a tax benefit of $849 million in 2017. Following adjustments made in 2018, the cumulative impact of the remeasurement of our U.S. net deferred income tax liabilities and tax accruals was an $844 million income tax benefit. Adjustments to the 2017 provisional amount were reported as a component of income tax expense in the reporting period in which the adjustments were identified.

To determine the full effects of the tax law for 2018, we are awaiting the finalization of several proposed U.S. Treasury regulations under the Tax Act that were issued during 2018, as well as additional regulations to be proposed and finalized pursuant to the U.S. Treasury's expanded regulatory authority under the Tax Act. It is also possible that technical correction legislation concerning the Tax Act could retroactively affect tax liabilities for 2018. We will continue to analyze the Tax Act to determine the full effects of the new law as additional regulations are proposed and finalized.

Interest income earned by certain of our European subsidiaries through intercompany financings is either untaxed or taxed at rates substantially lower than the U.S. statutory rate. Tax regulations proposed in 2018 may affect tax deductible interest in the U.S. in future periods, however, we do not believe they will have a material impact as proposed. In addition, in 2016 the U.S. Treasury issued final Section 385 debt-equity regulations that impact our internal financings beginning in 2017. Pursuant to a 2017 Executive Order, the Treasury Department reviewed these regulations and determined that they should be retained, subject to further review following the enactment of U.S. tax reform. We are awaiting the U.S. Treasury's review of the existing Section 385 debt-equity regulations which could impact our internal financings in future years as well as any final regulations impacting interest deductions under the Tax Act. In addition, there has been an increased in attention, both in the U.S. and globally, to the tax practices of multinational companies, including the European Union's state aid investigations, proposals by the Organization for Economic Cooperation and Development with respect to base erosion and profit shifting, and European Union tax directives. Such attention may result in further legislative changes that could adversely affect our tax rate. Other than the Tax Act, 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.

The significant components of the provision for income taxes are as follows:

Millions of U.S. Dollars	Note	2018	2017
Current tax on profits for the year		$ 322	$ 1,186
Deferred tax - origination and reversal of temporary difference	27	249	(508)
Income tax expense		$ 571	$ 678

The tax on LyondellBasell N.V.'s profit before tax differs from the theoretical amount that would arise using the weighted average tax rate applicable to profits of the consolidated entities as follows:

Millions of U.S. Dollars	2018	2017
Profit before tax	$ 5,223	$ 5,740
Tax calculated at domestic tax rates applicable to profits in the respective countries	1,275	1,837
Tax effects of:		
Exempt income	(340)	(332)
Remeasurement of U.S. net deferred tax liability	—	(849)
U.S. manufacturing deduction	—	(57)
Uncertain tax positions	(366)	28
Other	2	51
Tax charge	$ 571	$ 678

The weighted average applicable tax rates for 2018 and 2017 were 24.4% and 32.2%, respectively. The decrease was primarily attributable to the change in U.S. federal income tax rate as a result of the Tax Act. Our effective income tax rate of 10.9% in 2018 and 11.8% in 2017 resulted in tax provisions of $571 million and $678 million, respectively. Compared to 2017, the 2018 effective income tax rate decreased primarily due to the change in U.S. federal income tax rate and the impact of an audit settlement impacting specific uncertain tax positions which resulted in a $404 million non-cash benefit to our effective tax rate, partially offset by the remeasurement of U.S. net deferred tax liability which occurred in 2017.

Current and deferred taxes related to items charged or (credited) directly to other comprehensive income during the period are as follows:

Millions of U.S. Dollars	2018	2017
Current tax:		
Currency translation differences	$ 13	$ (23)
Deferred tax:		
Retirement benefit obligation	26	47
Currency translation differences	6	(10)
Derivatives	14	(13)
Other	—	(2)
	$ 59	$ (1)

Current and deferred taxes credited directly to equity are as follows:

Millions of U.S. Dollars	Note	2018	2017
Current tax			
Share based payments		$ —	$ —
Deferred tax:			
Share based payments	26	8	(2)
		$ 8	$ (2)

14 Earnings Per Share

Basic earnings per share—Basic earnings per share is calculated by dividing the profit attributable to equity holders of the Company by the weighted average number of ordinary shares in issue during the period excluding ordinary shares purchased by the Company and held as treasury shares. The Company has unvested restricted stock units that are considered participating securities for earnings per share.

Millions of U.S. Dollars, except per share data	2018	2017
Profit attributable to LyondellBasell N.V.	$ 4,652	$ 5,064
Profit attributable to participating securities	(6)	(5)
Profit attributable to equity holders of the Company	4,646	5,059
Basic weighted average common stock outstanding	389	398
Basic earnings per share	$ 11.95	$ 12.70

Diluted earnings per share—Diluted earnings per share is calculated by adjusting the weighted average number of ordinary shares outstanding to assume conversion of all dilutive potential ordinary shares.

Millions of U.S. Dollars, except per share data	2018	2017
Profit attributable to LyondellBasell N.V.	$ 4,652	$ 5,064
Profit attributable to participating securities	(6)	(5)
Undistributed earnings allocated to non-vested shareholders	(5)	—
Profit attributable to equity holders of the Company	4,641	5,059
Basic weighted average common stock outstanding	389	398
Effect of dilutive securities:		
Stock options	—	1
Dilutive potential shares	389	399
Diluted earnings per share	$ 11.92	$ 12.70
Participating securities	—	—
Interim dividend per share of common stock	$ 4.00	$ 3.55

15 Intangible Assets

Millions of U.S. Dollars	Capitalized Developments Projects	Know-How	Technology Patent and Licenses	Goodwill	Emission Allowances	Customer Relationships	Favorable Contracts and Other Intangibles	Total
Balance at 1 January 2017	$ 87	$ —	$ —	$ 333	$ 276	$ —	$ 222	$ 918
Additions	9	—	—	8	113	—	15	145
Retirements	—	—	—	—	(8)	—	(1)	(9)
Amortization	(10)	—	—	—	(67)	—	(35)	(112)
Exchange differences	9	—	—	5	4	—	3	21
At 31 December 2017	$ 95	$ —	$ —	$ 346	$ 318	$ —	$ 204	$ 963
At 31 December 2017								
Cost	$ 163	$ —	$ —	$ 346	$ 786	$ —	$ 606	$ 1,901
Accumulated amortization and impairment	(68)	—	—	—	(468)	—	(402)	(938)
Closing balance	$ 95	$ —	$ —	$ 346	$ 318	$ —	$ 204	$ 963
Balance at 1 January 2018	$ 95	$ —	$ —	$ 346	$ 318	$ —	$ 204	$ 963
Additions	4	84	104	1,271	13	300	13	1,789
Retirements	—	—	—	—	(9)	—	(2)	(11)
Amortization	(10)	(4)	(7)	—	(65)	(7)	(26)	(119)
Exchange differences	(4)	(1)	(1)	(18)	(1)	(1)	(3)	(29)
Transfers	—	—	—	—	20	—	—	20
At 31 December 2018	$ 85	$ 79	$ 96	$ 1,599	$ 276	$ 292	$ 186	$ 2,613
At 31 December 2018								
Cost	$ 163	$ 83	$ 103	$ 1,599	$ 807	$ 299	$ 616	$ 3,670
Accumulated amortization and impairment	(78)	(4)	(7)	—	(531)	(7)	(430)	(1,057)
Closing balance	$ 85	$ 79	$ 96	$ 1,599	$ 276	$ 292	$ 186	$ 2,613

Additions to intangible assets for the year contains $1,271 million goodwill and $505 million intangible assets related to the acquisition of A. Schulman. For additional information on this transaction, see Note 5 *Business combinations*.

Research and development—Amortization expense is generally recorded as part of Cost of sales. Research and development expenditures recognized as expense for 2018 and 2017 were $99 million and $90 million, respectively.

Goodwill—Goodwill is allocated and monitored by management into the following groups of cash generating units ("CGU"):

Millions of U.S. Dollars	2018	2017
Intermediates and Derivatives	$ 178	$ 193
Olefins and Polyolefins - Americas	131	131
Olefins and Polyolefins - Europe, Asia, International	24	12
Technology	8	10
Advanced Polymers solutions	1,258	—
Total	$ 1,599	$ 346

The recoverable amount of a CGU is determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on management approved financial budgets covering a five-year period. Cash flows beyond the five-year period are extrapolated using the estimated growth rates described in the "Growth rate estimates" section below. Based on this analysis, the recoverable amounts of each of our cash generating units or groups of cash generating units were substantially in excess of their carrying value. Accordingly, no goodwill impairment was recognized in 2018 or 2017.

The calculation of value is most sensitive to the following assumptions:

- Gross margin
- Pre-tax discount rates
- Market share assumptions; and
- Growth rate used to extrapolate cash flows beyond the budget period

Gross margins—Gross margins are predicted in the planning period by using key hydrocarbon pricing estimates and product variable margins based on macroeconomic predictions and individual supply and demand balances.

Pre-tax discount rates—Pre-tax discount rates ("discount rates") represent the current market assessment of the risks specific to each cash generating unit, regarding the time value of money and individual risks of the underlying assets which have not been incorporated in the cash flow estimates. The discount rate calculation is based on the nature of the assets and activities of the Company's business and its operating segments and derived from its weighted average cost of capital ("WACC"). The WACC takes into account both debt and equity. The cost of equity is derived from the expected return on investment by the nature of the Company's assets and activities.

Market share assumptions—These assumptions are based on forecasts of demand for our products taking into consideration changes in global capacity.

Growth rate estimates—Rates are based upon managements' best estimates which are determined using published third party sources, internal knowledge and market insights based on macroeconomic predictions

With regard to the assessment of value in use, management believes that no reasonably possible change in any of the above key assumptions would cause the carrying value to materially exceed its recoverable amount.

The key assumptions used for value-in-use calculations are as follows:

	2018		2017	
	Pre-tax Discount Rate	**Growth Rate**	**Pre-tax Discount Rate**	**Growth Rate**
Intermediates and Derivatives	10%	2%	14%	2%
Olefins and Polyolefins - Americas	10%	2%	13%	2%
Olefins and Polyolefins - EAI	11%	2%	16%	2%
Technology	12%	3%	16%	3%
Advanced Polymers Solutions	13%	2%	—	—

16 Property, Plant and Equipment

Millions of U.S. Dollars	Land	Building and Equipment	Assets Under Construction	Joint Operations	Total
Balance at 1 January 2017	$ 278	$ 9,124	$ 1,083	$ 354	$ 10,839
Additions	10	14	1,642	31	1,697
Transfers	3	1,335	(1,345)	7	—
Disposals	—	(83)	—	(1)	(84)
Depreciation	—	(1,065)	—	(38)	(1,103)
Impairment	—	(11)	—	—	(11)
Exchange differences	22	295	42	13	372
At 31 December 2017	$ 313	$ 9,609	$ 1,422	$ 366	$ 11,710
At 31 December 2017					
Cost	$ 313	$ 15,320	$ 1,422	$ 682	$ 17,737
Accumulated depreciation and impairment	—	(5,711)	—	(316)	(6,027)
Closing balance	$ 313	$ 9,609	$ 1,422	$ 366	$ 11,710
Balance at 1 January 2018	$ 313	$ 9,609	$ 1,422	$ 366	$ 11,710
Additions	60	504	2,332	125	3,021
Transfers	—	1,390	(1,486)	96	—
Disposals	—	(18)	—	(18)	(36)
Depreciation	—	(1,108)	—	(46)	(1,154)
Impairment	—	(3)	—	—	(3)
Exchange differences	(9)	(119)	(12)	4	(136)
At 31 December 2018	$ 364	$ 10,255	$ 2,256	$ 527	$ 13,402
At 31 December 2018					
Cost	$ 364	$ 17,077	$ 2,256	$ 951	$ 20,648
Accumulated depreciation and impairment	—	(6,822)	—	(424)	(7,246)
Closing balance	$ 364	$ 10,255	$ 2,256	$ 527	$ 13,402

Additions to property plant and equipment for the year contains $448 million of assets related to the acquisition of A. Schulman. For additional information on this transaction, see Note 5 *Business combinations.*

Depreciation, amortization and impairment charges are recognized in Cost of sales, Selling costs and Administrative expenses as indicated in the following table:

Millions of U.S. Dollars	2018	2017
Cost of sales	$ 1,224	$ 1,175
Selling costs	13	1
Administrative expenses	48	50
Total	$ 1,285	$ 1,226

17 Investments in Associates and Joint Ventures

The Company does not have any joint ventures or associates that are considered individually material. None of the associates and joint ventures is listed on a stock exchange.

Summarized aggregate financial information of the joint ventures and associates are shown below.

The amounts recognized on our Consolidated Statement of Financial Position are as follows:

	31 December	
Millions of U.S. Dollars	**2018**	**2017**
Associates	$ 328	$ 347
Joint ventures	864	1,017
	$ 1,192	$ 1,364

The amounts recognized on our Consolidated Statement of Income are as follows:

Millions of U.S. Dollars	**2018**	**2017**
Associates	$ 28	$ 50
Joint ventures	166	167
	$ 194	$ 217

Associates

The changes in our Associates investments are as follows:

Millions of U.S. Dollars	**2018**	**2017**
Opening balance	$ 347	$ 353
Share in profit of associates, net of tax	28	53
Business combinations	2	—
Unrealized gain on Available for sale securities	—	19
Impairment	—	(3)
Dividends received	(32)	(60)
Divestitures	(11)	(35)
Currency exchange differences	(6)	23
Other	—	(3)
Closing balance	$ 328	$ 347

In September 2017, we sold our 27% ownership interest in Geosel and received proceeds of $155 million.

Currency exchange differences are reported in the Consolidated Statement of Other Comprehensive Income within Currency translation of foreign operations.

Joint Ventures

The changes in our Joint Venture investments are as follows:

Millions of U.S. Dollars	2018	2017
Opening balance	$ 1,017	$ 939
Classification of Al-Waha Petrochemicals Ltd as joint operation	(113)	—
Share in profit of joint ventures, net of tax	166	167
Dividends received	(197)	(152)
Business combinations	14	—
Purchase of joint ventures	17	—
Currency exchange differences	(48)	63
Other	8	—
Closing balance	$ 864	$ 1,017

In October 2018, we amended our offtake agreement with Al-Waha Petrochemicals Ltd. that became a joint operation.

Currency exchange differences are reported in the Consolidated Statement of Other Comprehensive Income within Currency translation of foreign operations.

Principal Subsidiaries

Information about principal subsidiaries at 31 December 2018 is set out in Appendix A.

18 Financial Assets and Liabilities by Category

	2018				2017			
Millions of U.S. Dollars	Financial assets at amortized cost	Assets Held at Fair Value	Derivatives Used for Hedging	Total	Financial assets at amortized cost	Assets Held at Fair Value	Derivatives Used for Hedging	Total
Financial assets at 31 December								
Trade and other receivables excluding prepayments	$ 4,638	$ —	$ —	$ 4,638	$ 4,554	$ —	$ —	$ 4,554
Derivative financial instruments	—	149	48	197	—	70	22	92
FVOCI investments	—	892	—	892	—	1,307	—	1,307
Cash and cash equivalents	415	—	—	415	1,579	—	—	1,579
Total	$ 5,053	$ 1,041	$ 48	$ 6,142	$ 6,133	$ 1,377	$ 22	$ 7,532

	Other Financial Liabilities at Amortized Cost	Liabilities at Fair Value through Profit and Loss	Derivatives Used for Hedging	Total	Other Financial Liabilities at Amortized Cost	Liabilities at Fair Value through Profit and Loss	Derivatives Used for Hedging	Total
Financial liabilities at 31 December								
Borrowings	$ 9,563	$ —	$ —	$ 9,563	$ 8,707	$ —	$ —	$ 8,707
Derivative financial instruments	—	61	115	176	—	94	186	280
Trade and other payables	4,442	—	—	4,442	4,145	—	—	4,145
Total	$ 14,005	$ 61	$ 115	$ 14,181	$ 12,852	$ 94	$ 186	$ 13,132

19 Credit Quality of Financial Assets

Investments in cash and cash equivalents and transactions involving derivative financial instruments are entered into with counterparties that have sound credit ratings and a good reputation. FVOCI investments consist of commercial paper, bonds and certificates of deposits, time deposits and limited partnership investments with counterparties whose credit rating is investment grade or higher.

We have a global credit risk management policy to minimize credit losses due to non-performance of our customer base. We monitor our exposure to credit risk on an on-going basis through a team of credit professionals stationed in our key global markets. We have continued to manage our customer credit risk very closely by monitoring our aging analysis along with payment and financial performance. Where appropriate, additional security instruments, letters of credit or corporate guarantees, are secured. Due to our global breadth and scale, we do not have a significant concentration of customer risk. Our largest counterparty risk amounted to $95 million and $68 million at 31 December 2018 and 2017, respectively.

20 Derivative and Other Financial Instruments

	31 December		
Millions of U.S. Dollars	**2018**	**2017**	**Statement of Financial position classification**
Assets			
Derivatives -			
Designated as hedges:			
Commodities	$ 12	$ —	Derivative financial instruments
Foreign Currency	2	1	Derivative financial instruments
Interest rates	34	21	Derivative financial instruments
Not designated as hedges:			
Commodities	5	20	Derivative financial instruments
Foreign currency	144	50	Derivative financial instruments
Non-derivatives:			
Debt securities	567	960	Financial assets at fair value through other comprehensive income
Equity securities	325	347	Financial assets at fair value through profit or loss
Total	$ 1,089	$ 1,399	
Liabilities			
Derivatives -			
Designated as hedges:			
Commodities	$ —	$ 8	Derivative financial instruments
Foreign Currency	54	115	Derivative financial instruments
Interest rates	61	63	Derivative financial instruments
Not designated as hedges:			
Commodities	15	29	Derivative financial instruments
Foreign currency	46	65	Derivative financial instruments
Total	$ 176	$ 280	

For further details on derivatives, reference is made to Note 4 Financial Risk Management.

21 Inventories

Millions of U.S. Dollars	31 December 2018	31 December 2017
Finished goods	$ 2,745	$ 2,543
Parts and materials	597	561
Raw materials and supplies	1,126	1,111
Total inventories	$ 4,468	$ 4,215

Cost of inventories of $27,048 million and $22,647 million in 2018 and 2017, respectively, has been recognized as expense and included in Cost of sales.

22 Trade and Other Receivables

Millions of U.S. Dollars	31 December 2018	31 December 2017
Trade receivables	$ 3,368	$ 3,417
Trade receivables on related parties	148	131
Less: provision for impairment of trade receivables	(18)	(17)
Trade receivables, net	3,498	3,531
Social security and other taxes	231	198
Prepaid expenses	158	182
Repurchase agreements	544	570
Other	365	255
Total	4,796	4,736
Less: non-current portion	(194)	(122)
Current portion	$ 4,602	$ 4,614

The carrying value of the trade and other receivables approximates their fair value. The maximum exposure to credit risk at the reporting date is the carrying value of each class of receivable mentioned above. We do not hold any collateral as security.

The provision for doubtful trade receivables is determined based on ageing and reviewed periodically. The creation and release of provisions for impaired receivables have been included in Selling costs in the Consolidated Statement of Income.

The ageing of the net trade receivables at 31 December were as follows:

Millions of U.S. Dollars	2018	2017
Amounts undue	$ 3,294	$ 3,372
Past due 0-90 days	203	149
Past due 91-180 days	1	10
	$ 3,498	$ 3,531

The aging of the gross trade receivables provided for at 31 December were as follows:

Millions of U.S. Dollars	2018 Gross	2018 Provision	2017 Gross	2017 Provision
Amounts undue	$ —	$ —	$ —	$ —
Past due 0-90 days	—	—	—	—
Past due 91-180 days	18	18	17	17
	$ 18	$ 18	$ 17	$ 17

At 31 December 2018 and 2017, trade receivables of an initial value of $18 million and $17 million, respectively, were impaired and fully provided for. The movement in the provision for doubtful accounts is as follows:

Millions of U.S. Dollars	2018	2017
Balance, 1 January	$ 17	$ 16
(Write off) additions, net	1	1
Balance, 31 December	$ 18	$ 17

Trade receivables secured by letters of credit were $98 million and $136 million at 31 December 2018 and 2017, respectively. The carrying amounts of trade and other receivables are denominated in the following currencies at 31 December:

Millions of U.S. Dollars	2018	2017
USD	$ 3,872	$ 3,810
EUR	483	459
Other	441	467
	$ 4,796	$ 4,736

For further details on trade receivables, reference is made to Note 4 Financial Risk Management.

23 Cash and Cash Equivalents

For the purpose of the Consolidated Statement of Cash Flows, Cash and cash equivalents comprise the following at 31 December:

Millions of U.S. Dollars	2018	2017
Cash at bank and on hand	$ 396	$ 1,147
Short-term deposits	19	432
	$ 415	$ 1,579

Cash at banks earns interest at floating rates based on daily bank deposit rates. Short-term deposits are made for varying periods of between one day and three months, depending on the immediate cash requirements, and earn interest at the respective short-term deposit rates.

24 Equity Attributable to the Owners of the Company

The Company's authorized share capital totals €51 million divided into 1,275 million ordinary shares of €0.04 each.

For a breakdown of Equity attributable to equity holders, reference is made to the Consolidated Statement of Changes in Equity. For a detail of the non-distributable reserves, reference is made to the Corporate Financial Statements.

Dividend distribution—We declared and paid the following dividends for the following periods:

Millions of U.S. Dollars, except per share amounts	Dividend Per Ordinary Share	Aggregate Dividends Paid	Date of Record
For the year 2018:			
March	$ 1.00	$ 395	5 March 2018
June	1.00	392	11 June 2018
September	1.00	389	5 September 2018
December	1.00	378	10 December 2018
	$ 4.00	$ 1,554	
For the year 2017:			
March	$ 0.85	$ 343	6 March 2017
May	0.90	361	5 June 2017
September	0.90	356	6 September 2017
December	0.90	355	5 December 2017
	$ 3.55	$ 1,415	

Special Stock— In November 2018, we paid a total of $2 million related to dividends on A. Schulman special stock.

Share Repurchase Program—In June 2018, our shareholders approved a proposal to authorize us to repurchase up to 57,844,016 of our outstanding ordinary shares through 1 December 2019 ("June 2018 Share Repurchase Program"), which superseded the remaining authorization under our May 2017 Share Repurchase Program.

The timing and amount of these repurchases, which are determined based on our evaluation of market conditions and other factors, 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:

	2018		
Millions of U.S. Dollars, except shares and per share amounts	Shares Repurchased	Average Purchase Price	Total Purchase Price, Including Commissions
2017	4,004,753	$ 106.05	$ 425
2018	15,215,966	95.49	1,453
	19,220,719	$ 97.69	$ 1,878

	2017		
	Shares Repurchased	Average Purchase Price	Total Purchase Price, Including Commissions
2016	3,501,084	$ 85.71	$ 300
2017	6,516,917	83.54	545
	10,018,001	$ 84.30	$ 845

Due to the timing of settlements, total cash paid for share repurchases for the years ended 31 December 2018 and 2017 was $1,854 million and $866 million, respectively.

Ordinary Shares—The changes in the outstanding amounts of ordinary shares are as follows:

	31 December	
	2018	2017
Ordinary shares outstanding:		
Beginning balance	394,512,054	404,046,331
Share-based compensation	307,335	371,980
Warrants exercised	—	4,184
Employee stock purchase plan	121,398	107,560
Purchase of ordinary shares	(19,244,126)	(10,018,001)
Ending balance	375,696,661	394,512,054

Treasury Shares—The changes in the amounts of treasury shares held by the Company are as follows:

	31 December	
	2018	2017
Ordinary shares held as Treasury shares:		
Beginning balance	183,928,109	174,389,139
Share-based compensation	(307,335)	(371,980)
Warrants exercised	—	509
Employee stock purchase plan	(121,398)	(107,560)
Purchase of ordinary shares	19,244,126	10,018,001
Treasury shares canceled	(178,229,883)	—
Ending balance	24,513,619	183,928,109

25 Non-Controlling Interests

Non-controlling interests primarily represent the interest of unaffiliated investors in a partnership that owns our PO/SM II plant at the Channelview, Texas complex and A. Schulman plastics.

In April 2017, we increased our interest in the entity that holds our equity interest in Al Waha Petrochemicals Ltd. from 83.79% to 100% by paying $21 million to exercise a call option to purchase the remaining 16.21% interest held by a third party.

26 Borrowings

The carrying amounts of the borrowings and the fair value of the non-current borrowings as of 31 December are as follows:

Millions of U.S. Dollars	2018 Carrying Value	2018 Fair Value	2017 Carrying Value	2017 Fair Value
Non-current:				
Senior Notes due 2019, $2,000 million, 5.0%	$ —	$ —	$ 961	$ 1,027
Senior Notes due 2021, $1,000 million, 6.0%	974	1,056	981	1,113
Senior Notes due 2024, $1,000 million, 5.75%	993	1,069	992	1,137
Senior Notes due 2055, $1,000 million, 4.625%	973	839	973	1,040
Guaranteed Notes due 2044, $1,000 million, 4.875%	980	896	979	1,107
Guaranteed Notes due 2023, $750 million, 4.0%	742	750	740	800
Guaranteed Notes due 2043, $750 million, 5.25%	722	717	722	870
Guaranteed Notes due 2027, $300 million, 8.1%	964	913	300	399
Guaranteed Notes due 2022, €750 million 1.875%	855	881	894	945
Guaranteed Notes due 2027. $1,000 million. 3.5%	300	359	984	1,004
Other	159	159	93	93
Total	$ 7,662	$ 7,639	$ 8,619	$ 9,535
Current:				
Senior Notes due 2019, $2,000 million, 5.0%	$ 988	$ 996	$ —	$ —
Other	913	919	88	98
Total	$ 1,901	$ 1,915	$ 88	$ 98
Total borrowings	$ 9,563	$ 9,554	$ 8,707	$ 9,633

The fair values of the senior notes and guaranteed notes are based on data obtained from well-established and recognized vendors of market data for debt valuations. The fair value of the finance payable to investees and the Other equals the carrying amount, as the impact of discounting is not significant.

The following table sets out an analysis of the cash movements in borrowings for the period.

Millions of U.S. Dollars	Current Borrowings	Non-current Borrowings	Total
Balance as at 1 January 2017	$ 616	$ 8,473	$ 9,089
Net Cash Flows	(497)	(17)	(514)
Foreign Exchange Adjustments	—	148	148
Other Non-cash movements	(31)	15	(16)
Balance as at 31 December 2017	88	8,619	8,707
Transfer from Non-current to Current	961	(961)	—
Net Cash Flows	810	(1)	809
Foreign Exchange Adjustments	25	(70)	(45)
Other Non-cash movements	17	75	92
Balance as at 31 December 2018	$ 1,901	$ 7,662	$ 9,563

Gains (losses) related to fair value adjustments associated with the fair value hedge accounting of our fixed-for-floating interest rate swaps for the applicable periods are as follows:

		Gains (Losses)		Cumulative Fair Value Hedging Adjustments Included in Carrying Amount of Debt	
		Year Ended 31 December		Year Ended 31 December	
Millions of dollars	Inception Year	2018	2017	2018	2017
Senior Notes due 2019, 5.0%	2014	$ (25)	$ (48)	$ 11	$ 36
Senior Notes due 2021, 6.0%	2016	8	9	20	12
Guaranteed Notes due 2027, 3.5%	2017	22	(1)	21	(1)
Guaranteed Notes due 2022, 1.875%	2018	(1)	—	(1)	—
Total		$ 4	$ (40)	$ 51	$ 47

These fair values adjustments are recognized in finance cost in the Consolidated Statement of income.

The carrying amounts of our borrowings are denominated in the following currencies at 31 December:

	31 December	
Millions of U.S. Dollars	2018	2017
USD	$ 8,521	$ 7,720
EUR	861	896
Other	181	91
	$ 9,563	$ 8,707

Aggregate maturities of debt during the next five years are $1,913 million in 2019, $40 million in 2020, $1,039 million in 2021, $897 million in 2022, $790 million in 2023 and $5,051 million thereafter.

Long-Term Debt

Guaranteed Notes due 2027—In March 2017, LYB International Finance II B.V. ("LYB Finance II"), 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 3.5% guaranteed notes due 2027 at a discounted price of 98.968%. In March 2017, the net proceeds from these notes, together with available cash, were used to redeem $1,000 million aggregate principal amount of our outstanding 5% senior notes due 2019.

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 II's existing and future unsecured indebtedness and to all of LyondellBasell Industries N.V.'s existing and future unsubordinated indebtedness. There are no significant restrictions that would impede LyondellBasell Industries N.V., as guarantor, from obtaining funds by dividend or loan from its subsidiaries.

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 three 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 three months 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 accrued and unpaid interest.

Senior Notes due 2019, 2021 and 2024—In February 2019, proceeds from the new Senior Credit Agreement discussed below were used to redeem the remaining $1,000 million outstanding of our 5% Senior Notes due 2019 at par. In conjunction with the redemption of these notes, we recognized non-cash charges of less than $1 million of unamortized debt issuance costs and $8 million for the write-off of the cumulative fair value hedge accounting adjustment related to the redeemed notes.

In March 2017, we redeemed $1,000 million aggregate principal amount of our outstanding 5% senior notes due 2019, and paid $65 million in make-whole premiums. In conjunction with the redemption of these notes, we recognized non-cash charges of $4 million for the write-off of unamortized debt issuance costs and $44 million for the write-off of the cumulative fair value hedge accounting adjustment related to the redeemed notes.

We have outstanding $1,000 million aggregate principal amount of 5.75% senior notes due 2024, and $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.

Guaranteed notes due 2022—In March 2016, LYB Finance II issued €750 million of 1.875% guaranteed notes due 2022 at a discounted price of 99.607%

These unsecured notes, which are fully and unconditionally guaranteed by LyondellBasell Industries N.V., rank equally in right of payment to all of the LYB Finance II's existing and future unsecured indebtedness and to all of LyondellBasell Industries N.V.'s existing and future unsupported indebtedness. There are no significant restrictions that would impede LyondellBasell Industries N.V., as a guarantor, from obtaining funds by dividend or loan from its subsidiaries.

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 or subsidiaries that own significant property, enter into any sale and leaseback 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 3 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 Comparable Government Bond Rate plus 35 basis points) on the notes to be redeemed. The notes may also be redeemed on or after the date that is three months 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 accrued and unpaid interest. The notes are also redeemable upon certain tax events.

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%. These unsecured notes rank equally in right of payment to all of LyondellBasell Industries 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% Notes due 2023 and $750 million of 5.25% guaranteed 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.

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.

Guaranteed Notes due 2027—We have outstanding $300 million aggregate principal amount of 8.1% Guaranteed Notes due 2027. These notes, which are guaranteed by LyondellBasell Industries Holdings B.V., a subsidiary of LyondellBasell Industries N.V., contain certain restrictions with respect to the level of maximum debt that can be incurred and security that can be granted by certain operating companies that are direct or indirect wholly owned subsidiaries of LyondellBasell Industries Holdings B.V.

The 2027 Notes contain customary provisions for default, including, among others, the non-payment of principal and interest, certain failures to perform or observe obligations under the Agreement on the notes the occurrence of certain defaults under other indebtedness, failure to pay certain indebtedness and the insolvency or bankruptcy of certain LyondellBasell Industries N.V. subsidiaries.

Short-Term Debt

Senior Credit Agreement-In February 2019, LYB Americas Finance Company LLC ("LYB Americas Finance"), a wholly owned subsidiary of LyondellBasell Industries N.V., entered into a 364-day, $2,000 million senior unsecured term loan credit agreement and borrowed the entire amount. The proceeds of this term loan, which is fully and unconditionally guaranteed by LyondellBasell Industries N.V. are intended for general corporate purposes, including the repayment of debt.

Borrowings under the credit agreement will bear interest at either a LIBOR rate or a base rate, as defined, plus in each case, an applicable margin determined by reference to LyondellBasell Industries N.V.'s current credit ratings.

The credit agreement contains customary covenants and warranties, including specified restrictions on indebtedness, including secured and subsidiary indebtedness, and merger and sales of assets. In addition, we are required to maintain a leverage ratio at the end of every fiscal quarter of 3.50 to 1.00 or less.

Senior Revolving Credit Facility—In June 2017, the term of our $2,500 million revolving credit facility was extended for one year to June 2022 pursuant to a consent agreement. All other material terms of the revolving credit facility remained unchanged.

The revolving credit facility may be used for dollar and euro denominated borrowings, has a $500 million sublimit for dollar and euro denominated letters of credit, a $1,000 million uncommitted accordion feature, and supports our commercial paper program. The aggregate balance of outstanding borrowings and letters of credit under this facility may not exceed $2,500 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 31 December 2018.

At 31 December 2018, we had $809 million of outstanding commercial paper, no outstanding letters of credit and no outstanding borrowings under the facility.

Commercial Paper Program—We have a commercial paper program which we may issue up to $2,500 million of privately placed, unsecured, short-term promissory notes ("commercial paper"). The program is backed by our $2,500 million Senior Revolving Credit Facility. Proceeds from the issuance of commercial paper may be used for general corporate purposes, including dividends and share repurchases. Interest rates on the commercial paper outstanding at December 31, 2018 are based on the terms of the notes and range from 2.65% to 3.12%.

U.S. Receivables Facility—In July 2018, we amended our $900 million U.S. accounts receivable facility to among other things, extend the term of the facility to July 2021.The facility has a purchase limit of $900 million in addition to a $300 million uncommitted accordion feature. This 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 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. Additional fees are incurred for the average daily unused commitments. We are in compliance with these covenants as of 31 December 2018.

At 31 December 2018, there were no borrowings or letters of credit outstanding under the facility.

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 short-term debt.

27 Deferred Income Tax

The gross movement in the deferred income tax account is as follows:

Millions of U.S. Dollars	Note	2018	2017
Opening balance		$ 1,560	$ 2,032
Income statement charge	13	249	(508)
Tax charge/(credit) relating to components of other comprehensive income	13	46	22
Tax charge/(credit) directly relating to equity	13	8	(2)
Tax charge/(credit) relating to reclass from deferred tax liabilities		102	(3)
Currency translation adjustment		(9)	19
Deferred tax liabilities, net		$ 1,956	$ 1,560

The deferred tax movement 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 are presented below. The 2017 impact of remeasurement of the U.S. net deferred tax liability resulting from the U.S. enactment of the Tax Act and the 2018 impact of A. Schulman are included in the various components of deferred income taxes. For additional information on this transaction, see Note 5 *Business combinations*.

Millions of U.S. Dollars	Retirement Benefit Obligation	Tax Attributes	Other	Total
Deferred income tax assets:				
Balance at 1 January 2017	$ 422	$ 161	$ 49	$ 632
(Charged)/credited to the income statement	(50)	(84)	12	(122)
(Charged)/credited to other comprehensive income	(47)	2	23	(22)
(Charged)/credited to equity	2	—	—	2
(Charged)/credited for deferred tax liabilities and current tax liabilities reclassification	(5)	5	18	18
Currency translation adjustment	24	16	—	40
Balance at 31 December 2017	$ 346	$ 100	$ 102	$ 548
Reclassification				(417)
Net deferred taxes				$ 131
Balance at 1 January 2018	$ 346	$ 100	$ 102	$ 548
(Charged)/credited to the income statement	8	(89)	3	(78)
(Charged)/credited to other comprehensive income	(26)	—	(20)	(46)
(Charged)/credited to equity	(8)	—	—	(8)
(Charged)/credited for deferred tax liabilities and current tax liabilities reclassification	36	53	6	95
Currency translation adjustment	(8)	(3)	(1)	(12)
Balance at 31 December 2018	$ 348	$ 61	$ 90	$ 499
Reclassification				(434)
Net deferred taxes				$ 65

Millions of U.S. Dollars	Intangible Assets	Accelerated Tax Depreciation	Inventory	Other	Total
Deferred income tax liabilities					
Balance at 1 January 2017	$ 152	$ 1,922	$ 274	$ 316	$ 2,664
Charged/(credited) to the Income statement	(88)	(436)	(28)	(78)	(630)
Reclass (to)/from deferred tax assets	(2)	10	(9)	16	15
Currency translation adjustment	1	48	5	5	59
Balance at 31 December 2017	$ 63	$ 1,544	$ 242	$ 259	$ 2,108
Reclassification					(417)
Net deferred taxes					$ 1,691
Balance at 1 January 2018	$ 63	$ 1,544	$ 242	$ 259	$ 2,108
Charged/(credited) to the income statement	(29)	169	(4)	35	171
Reclass (to)/from deferred tax assets	132	140	7	(82)	197
Currency translation adjustment	—	(19)	(2)	—	(21)
Balance at 31 December 2018	$ 166	$ 1,834	$ 243	$ 212	$ 2,455
Reclassification					(434)
Net deferred taxes					$ 2,021

At 31 December 2018 and 2017, we had realizable tax attributes available in the amount of $209 million and $345 million, respectively, for which a deferred tax asset was recognized at 31 December 2018 and 2017 of $61 million and $100 million, respectively.

Deferred tax assets are recognized for tax attributes to the extent that the realization of the related tax benefit through future taxable profits is probable. Prior to the close of each reporting period, management considers the weight of all evidence, both positive and negative, to determine if the deferred tax assets for tax attributes and deductible temporary differences for each jurisdiction can be valued at full value. 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.

The Company did not recognize deferred tax assets of $119 million and $106 million with respect to tax attributes amounting to $729 million and $470 million and other temporary differences for the years ended 31 December 2018 and 2017, respectively, which can be carried forward against future taxable income.

The expiration periods of the unrecognized tax attributes and the related deferred tax asset as of 31 December 2018 are as follows:

Millions of U.S. Dollars	Gross Tax Attributes	Deferred Tax on Tax Losses
In 2019	$ 47	$ 13
In 2020	12	1
In 2021	31	1
In 2022	18	1
In 2023	33	1
Thereafter	284	37
Indefinite	304	65
	$ 729	$ 119

As of 31 December 2018 and 2017, deferred taxes of $96 million and $51 million, respectively, have been provided on the unremitted earnings (to the extent such earnings are subject to taxation on their future remittance) of certain equity joint ventures and subsidiaries.

Contingencies- Certain income tax returns of LyondellBasell N.V. and its subsidiaries are under examination by tax authorities. These audits may result in proposed assessments by the tax authorities. The Company believes that its tax positions comply with applicable tax law and intends to defend its positions through appropriate administrative and judicial processes.

Our current income tax payable is expected to be settled within the next 12 months.

28 Retirement Benefit Obligations

Millions of U.S. Dollars	Note	2018	2017
Asset in the Consolidated Statement of Financial Position:			
Defined benefit pension plans		$ 25	$ 19
Liabilities in the Consolidated Statement of Financial Position:			
Defined benefit pension plans		1,052	981
Other post-employment benefit plans		293	342
Total liabilities		1,345	1,323
Net defined benefit liabilities		$ 1,320	$ 1,304
Income statement charge:	8		
Defined benefit pension plans		$ 111	$ 113
Other post-employment benefit plans		14	15
Total charges		$ 125	$ 128
Remeasurements recognized in the Consolidated Statement of Other Comprehensive Income (loss) in the period (before tax):			
Defined benefit pension plans		55	90
Other post-employment benefit plans		49	9
Total recognized in Other Comprehensive Income in the period		$ 104	$ 99

We have defined benefit pension plans which cover employees in various 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 Italy and Germany, we provide other post-employment benefits such as early retirement and deferred compensation severance benefits. We use a measurement date of 31 December for all of our benefit plans.

The U.S. defined benefit pension plans are subject to the provisions of the Employee Retirement Income Security Act of 1974 ("ERISA"), including minimum funding requirements. The benefits under the U.S. defined benefit plans are determined either under a cash balance formula or another formula based on the participant's earnings history or service or both. The benefit payments are made from a trust or insurance contract. The plans are administered by the Company's Benefits Administrative Committee ("BAC") and investment of the trust assets is directed by external investment managers hired and monitored by the Company's Benefits Finance Committee ("BFC"). Both the BAC and BFC consist of individuals appointed by the Board of Directors of Lyondell Chemical Company, a wholly owned subsidiary of the Company.

The non-U.S. defined benefit pension plans are subject to the regulatory framework and minimum funding requirements of applicable jurisdictions in which the plans are operated. The benefits under the non-U.S. defined benefit pension plan are also generally calculated based on the participant's earnings history or service or both. The benefit payments from certain non-U.S. plans are made from a trust or insurance contract; however, there are also a number of unfunded plans under which the Company meets each benefit payment obligation as it falls due. Management of non-U.S. plan assets is governed by local regulations and practice in each applicable jurisdiction.

Defined benefit pension plans

The amounts recognized in the Statement of Financial Position are determined as follows:

	31 December	
Millions of U.S. Dollars	2018	2017
Present value of benefit obligations	$ (3,390)	$ (3,435)
Fair value of plan assets	2,377	2,487
Deficit of defined benefit pension plans	(1,013)	(948)
Effect of asset limitation and minimum funding requirement	(14)	(14)
Net liability	$ (1,027)	$ (962)

The changes in the net defined benefit liability over the year are as follows:

Millions of U.S. Dollars	Present Value of Obligation	Fair value of plan assets	Total	Effect of asset limitation and minimum funding requirement	Total
At 1 January 2017	$ 3,337	$ (2,395)	$ 942	$ 8	$ 950
Current service cost	76	—	76	—	76
Past service cost	11	—	11	—	11
Interest expense (income)	83	(55)	28	—	28
	170	(55)	115	—	115
Remeasurements:					
- Return on plan assets (excluding interest income)	—	(26)	(26)	—	(26)
- Effect of changes in demographic assumptions	(12)	—	(12)	—	(12)
- Effect of changes in financial assumptions	(68)	—	(68)	—	(68)
- Effect of changes in experience adjustments	12	—	12	—	12
- Effect of business combinations/divestitures/ transfers	—	—	—	5	5
	(68)	(26)	(94)	5	(89)
Exchange differences	180	(92)	88	1	89
Contributions:					
- Employers	—	(103)	(103)	—	(103)
- Plan participants	1	(1)	—	—	—
Payments from plans:					
- Benefit payments	(185)	185	—	—	—
- Settlement payments	—	—	—	—	—
At 31 December 2017	$ 3,435	$ (2,487)	$ 948	$ 14	$ 962

Millions of U.S. Dollars	Present Value of Obligation	Fair value of plan assets	Total	Effect of asset limitation and minimum funding requirement	Total
At 1 January 2018	$ 3,435	$ (2,487)	$ 948	$ 14	$ 962
Current service cost	75	—	75	—	75
Past service cost	4	—	4	—	4
Interest expense (income)	92	(61)	31	—	31
	171	(61)	110	—	110
Remeasurements:					
- Return on plan assets (excluding interest income)	—	87	87	—	87
- Effect of changes in demographic assumptions	(13)	—	(13)	—	(13)
- Effect of changes in financial assumptions	(124)	—	(124)	—	(124)
- Effect of changes in experience adjustments	(5)	—	(5)	—	(5)
- Effect of business combinations/divestitures/ transfers	195	—	195	—	195
	53	87	140	—	140
Exchange differences	(80)	44	(36)	—	(36)
Contributions:					
- Employers	—	(101)	(101)	—	(101)
- Plan participants	1	(1)	—	—	—
Payments from plans:					
- Benefit payments	(190)	190	—	—	—
- Settlement payments	—	—	—	—	—
Effect of business combinations	—	(48)	(48)	—	(48)
At 31 December 2018	$ 3,390	$ (2,377)	$ 1,013	$ 14	$ 1,027

The defined benefit obligation and plan assets are composed by country as follows:

	2018							
Millions of U.S. Dollars	U.S.	Canada	France	Germany	Netherlands	U.K.	Other	Total
Present value of obligation	$ 1,751	$ 80	$ 158	$ 566	$ 593	$ 202	$ 40	$ 3,390
Fair value of plan assets	(1,548)	(94)	(13)	—	(505)	(207)	(10)	(2,377)
Effect of asset limitation and minimum funding requirement	—	14	—	—	—	—	—	14
Total	$ 203	$ —	$ 145	$ 566	$ 88	$ (5)	$ 30	$ 1,027

	2017							
Millions of U.S. Dollars	U.S.	Canada	France	Germany	Netherlands	U.K.	Other	Total
Present value of obligation	$ 1,924	$ 88	$ 175	$ 453	$ 568	$ 195	$ 32	$ 3,435
Fair value of plan assets	(1,680)	(102)	(18)	—	(482)	(201)	(4)	(2,487)
Effect of asset limitation and minimum funding requirement	—	14	—	—	—	—	—	14
Total	$ 244	$ —	$ 157	$ 453	$ 86	$ (6)	$ 28	$ 962

As of 31 December 2018, the present value of the defined benefit obligation was comprised of approximately $1,582 million relating to active employees, $543 million relating to vested deferred members and $1,265 million relating to members in retirement. As of 31 December 2017, the present value of the defined benefit obligation was comprised of approximately $1,609 million relating to active employees, $572 million relating to vested deferred members and $1,254 million relating to members in retirement.

The expected contributions to be paid to the defined benefit pension plans and the multi-employer plan during 2019 are $108 million and $8 million, respectively.

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 Company or other oversight bodies actively monitor investment results. Investments are well diversified such that the failure of any single position would not have a material effect on the overall level of assets.

The actual return on plan assets was a loss of $26 million (a gain of $81 million in 2017).

The major categories of plan assets as a percentage of total plan assets are:

	2018	2017
Equity securities	27%	29%
Fixed income securities	25%	27%
U.S. government securities	6%	6%
Alternatives [(a)]	19%	18%
Insurance Arrangements	23%	20%

(a) Include investments in real estate, hedge funds, private equity and insurance annuity contracts.

The plan assets are summarized as follows at 31 December:

	2018			2017		
Millions of U.S. Dollars	Quoted	Unquoted	Total	Quoted	Unquoted	Total
Common and preferred stock						
Domestic	$ 169	$ —	$ 169	$ 181	$ —	$ 181
International	162	—	162	229	—	229
Fixed income securities						
Corporate bonds	189	—	189	208	—	208
Municipal bonds	12	—	12	13	—	13
Foreign government issued bonds	3	—	3	4	—	4
Commingled funds						
Domestic equity	145	—	145	135	—	135
International equity	180	—	180	180	—	180
Fixed income	384	—	384	392	—	392
Real estate	—	107	107	—	102	102
Hedge funds	—	241	241	—	253	253
Private equity	—	108	108	—	94	94
U.S. government securities						
U.S. Treasury securities	133	—	133	148	—	148
Cash and cash equivalents	28	—	28	39	—	39
Insurance Arrangements	—	570	570	—	503	503
Total Pension Assets	$ 1,405	$ 1,026	$ 2,431	$ 1,529	$ 952	$ 2,481

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

During 2017, Netherlands Defined Benefits pension plans modified their insurance arrangements. As a result, the plan assets were transferred to the insurer for investment in its pooled asset portfolio, and treated as a nonparticipating insurance contract. The associated plan assets of $482 million underlying the insurance arrangement at 31 December 2018 and 2017 are measured using the vested benefit obligation. The transfer of plan assets resulted in a change in classification from quoted in 2016 for fixed income securities to unquoted in 2017.

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

	2018	2017
Discount rate	3.30%	3.01%
Rate of salary increase	3.60%	3.27%
Rate of price inflation	2.30%	2.30%
Rate of pension increase	2.00%	1.91%

The weighted average assumptions used to determine net pension cost were as follows:

	2018	2017
Discount rate	3.01%	2.96%
Rate of salary increase	3.27%	3.25%
Rate of price inflation	2.30%	2.28%
Rate of pension increase	1.91%	1.89%

The sensitivity analysis presented in the following table is based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated.

The sensitivity of the benefit obligations to changes in the discount rate is as follows:

Millions of U.S. Dollars	Effects on benefit obligations in 2018	Change %	Effects on benefit obligations in 2017	Change %
Present value of obligations	$ 3,390		$ 3,435	
Discount rate increases by 50 basis points	(211)	(6.2)%	(215)	(6.3)%
Discount rate decreases by 50 basis points	239	7.1 %	238	6.9 %

Reasonably foreseeable changes to the other principal assumptions would not result in a material impact to the benefit obligations and the benefit costs of our pension plans.

The defined benefit pension plans and the other post-employment benefit plans are subject to a number of risks, the most significant of which are discussed below:

Market price risk—Significant changes in investment performance may result in corresponding increases and decreases in the value of the plan assets.

Changes in bond yields—A decrease in corporate bond yields will increase plan liabilities, although this will be partially offset by an increase in the value of the plan's bond holdings.

Inflation risk-Some of the pension plans' benefit arrangements are directly related to the salary levels so that a significant increase in salaries could lead to an increase in the pension obligations of the plans.

Life expectancy-Some plan obligations provide benefits for the lifetime of the member and so increases in life expectancy could result in an increase in the plans' liabilities.

Multi-employer Plan—The Company participates in a multi-employer pension arrangement Pensionskasse der BASF WaG V.VaG (Pensionskasse), which provides for benefits to the majority of our employees in Germany. The plan provides fixed, monthly retirement payments on the basis of the credits earned by the participating employees. The Company-specific plan information for the Pensionskasse is not publicly available and the plan is not subject to a collective-bargaining agreement. Up to a certain salary level, the benefit obligations are covered by contributions of the Company and the employees to the Pensionskasse. To the extent that the Pensionskasse is underfunded or for benefits owed but not subject to the Pensionskasse arrangement, the Company's future contributions to the plan or payments to retirees may increase. The Pensionskasse was overfunded in 2018 and 2017. To the extent that benefit obligations under the plan are funded by Pensionskasse, the related Company contributions are expensed as incurred. The amounts accrued for expected future benefits payable which are not funded by Pensionskasse was $64 million and $57 million at 31 December 2018 and 2017, respectively. The re-measurements recognized in the Consolidated Statement of Other Comprehensive Income are a loss of $10 million and a gain of $5 million at 31 December 2018 and 2017, respectively.

The amounts recognized in the Consolidated Statement of Income are as follows:

	31 December	
Millions of U.S. Dollars	2018	2017
Company contributions to Pensionskasse	$ 8	$ 27

Other post-employment benefits plans

The amounts recognized in the Consolidated Statement of Financial Position are determined as follows:

	31 December	
Millions of U.S. Dollars	2018	2017
Present value of benefit obligations	$ 293	$ 342
Fair value of plan assets	—	—
Net liability	$ 293	$ 342

The changes in the net defined benefit liability over the year are as follows:

Millions of U.S. Dollars	Present value of obligation	Fair value of plan assets	Total
At 1 January 2017	$ 343	$ —	$ 343
Current service cost	5	—	5
Interest expense	10	—	10
	15	—	15
Remeasurements:			
- Effect of changes in demographic assumptions	(1)	—	(1)
- Effect of changes in financial assumptions	1	—	1
- Effect of changes in experience adjustments	(9)	—	(9)
	(9)	—	(9)
Exchange differences	8	—	8
Contributions:			
- Employers	—	(15)	(15)
- Plan participants	7	(7)	—
Payments from plans:			
- Benefit payments	(22)	22	—
At 31 December 2017	$ 342	$ —	$ 342

Millions of U.S. Dollars	Present value of obligation	Fair value of plan assets	Total
At 1 January 2018	$ 342	$ —	$ 342
Current service cost	4	—	4
Interest expense	10	—	10
	14	—	14
Remeasurements:			
- Effect of changes in demographic assumptions	(30)	—	(30)
- Effect of changes in financial assumptions	(17)	—	(17)
- Effect of changes in experience adjustments	(2)	—	(2)
	(49)	—	(49)
Exchange differences	(2)	—	(2)
Contributions:			
- Employers	—	(21)	(21)
- Plan participants	6	(6)	—
Payments from plans:			
- Benefit payments	(27)	27	—
Effect of business combinations	9	—	9
At 31 December 2018	$ 293	$ —	$ 293

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

	2018	2017
Discount rate	4.03%	3.44%
Rate of salary increase	4.50%	4.00%
Rate of price inflation	1.80%	1.70%

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

	2018	2017
Discount rate	3.44%	3.61%
Rate of salary increase	4.00%	4.00%
Rate of price inflation	1.70%	1.60%

The following table reflects the sensitivity of the benefit obligations of our other post-employment benefit plans to changes in the discount rate:

Millions of U.S. Dollars	Effects on benefit obligations in 2018	Change %	Effects on benefit obligations in 2017	Change %
Present value of obligations	$ 293		$ 342	
Discount rate increases by 50 basis points	(18)	(6.1)%	(20)	(5.8)%
Discount rate decreases by 50 basis points	19	6.5 %	23	6.7 %

Reasonably foreseeable changes to the other principal assumptions would not result in a material impact to the benefit obligations and the benefit costs of our other post-employment benefit plans.

The weighted average duration of the defined benefit obligation for the defined benefit pension plans and other post-employment benefit plans is 13.0 years and 12.5 years, respectively.

As of 31 December 2018, future expected benefit payments by our defined benefit pension plans and other post-employment benefit plans which reflect expected future service, as appropriate, are as follows:

Millions of U.S. Dollars	2018	2019	2020	2021	2022	Thereafter	Total
Defined benefit pension plans	$ 199	$ 195	$ 197	$ 198	$ 200	$ 996	$ 1,985
Other post-employment benefit plans	19	19	19	19	19	92	187
Total	$ 218	$ 214	$ 216	$ 217	$ 219	$ 1,088	$ 2,172

29 Trade and Other Payables

Millions of U.S. Dollars	31 December 2018	31 December 2017
Trade payables	$ 2,560	$ 2,327
Amounts due to related parties	527	568
Social securities and other taxes	29	27
Accrued expenses	1,326	1,223
	$ 4,442	$ 4,145

30 Provisions

Millions of U.S. Dollars	Asset Retirement Obligation	Environmental	Restructuring	Other	Total
Balance at 1 January 2017	103	95	32	61	291
Charged/(credited) to the income statement:					
Additional provisions	—	—	—	11	11
Unused amounts reversed	(41)	(2)	—	—	(43)
Unwinding of discount	2	—	—	—	2
Changes in estimate	—	14	6	—	20
Used during the period	(3)	(13)	(15)	(40)	(71)
Exchange differences	11	8	3	3	25
Other	1	—	—	—	1
At 31 December 2017	73	102	26	35	236
Of which:					
Non-current	64	90	12	21	187
Current	9	12	14	14	49
Closing balance	73	102	26	35	236
Balance at 1 January 2018	73	102	26	35	236
Charged/(credited) to the income statement:					
Additional provisions	—	—	21	7	28
Unused amounts reversed	—	—	—	(1)	(1)
Unwinding of discount	—	—	—	—	—
Changes in estimate	2	4	—	—	6
Used during the period	(2)	(13)	(26)	(10)	(51)
Exchange differences	(3)	(3)	(1)	(1)	(8)
Other	1	—	—	—	1
At 31 December 2018	71	90	20	30	211
Of which:					
Non-current	62	80	6	21	169
Current	9	10	14	9	42
Closing balance	71	90	20	30	211

Asset retirement obligations—At some locations, we are contractually obligated to decommission our plants upon site exit. We have provided for the net present value of the estimated costs. Typically such costs are incurred within three years of a plant's closure.

Environmental remediation—Our accrued liability for future environmental remediation costs at current and former plant sites and other remediation sites totaled $90 million and $102 million as of 31 December 2018 and 2017, respectively. At 31 December 2018, 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.

31 Contingencies and Commitments

Contingencies-Litigation and Other Matters

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 31 December 2018, 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 5 to 10 years.

Commitments

Purchase 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. At 31 December 2018, capital expenditure commitments were in incurred in our normal course of business, including commitments of approximately $685 million primarily related to building our new *Hyperzone* high-density polyethylene plant in La Porte, Texas and a world-scale PO/TBA plant on the Texas Gulf Coast.

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.

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

The operating lease expense for 2018 and 2017 totaled $496 million and $440 million, respectively.

The aggregate future estimated purchase obligations and minimum lease payments under non-cancellable operating leases are as follows:

	2018					
	Purchase Obligation					
Millions of U.S. Dollars	Joint Ventures		Consolidated Entities		Operating Leases	
No later than 1 year	$	589	$	7,101	$	365
Later than 1 year and no later than 5 years		2,201		10,392		984
Later than 5 years		910		6,922		1,126
Total	$	3,700	$	24,415	$	2,475

	2017					
	Purchase Obligation					
Millions of U.S. Dollars	Joint Ventures		Consolidated Entities		Operating Leases	
No later than 1 year	$	795	$	5,993	$	311
Later than 1 year and no later than 5 years		3,417		9,475		617
Later than 5 years		577		2,625		517
Total	$	4,789	$	18,093	$	1,445

32 Related Parties

The Company has related party transactions with its associates and joint ventures. These related party transactions include the sales and purchases of goods in the normal course of business as well as certain financing arrangements and are at arm's length basis. In addition, under contractual arrangements with certain of the Company's equity investees, we receive certain services, utilities and materials at some of our manufacturing sites and we provide certain services to our associates and joint ventures.

We have guaranteed €30 million ($34 million) of the indebtedness of one of our joint ventures as of 31 December 2018.

The related party transactions are summarized as follows:

	31 December			
Millions of U.S. Dollars	2018		2017	
The Company billed related parties for:				
Sale of products -				
Joint Ventures	$	13	$	13
Associates		29		26
Shared services agreements -				
Joint Ventures		3		4
Associates		6		12
Related parties billed the Company for:				
Sale of products -				
Joint Ventures	$	899	$	879
Associates		748		607
Shared services agreements -				
Associates		69		75
Year-end balances with related parties:				
Receivable from Joint Ventures	$	3	$	4
Loans to Associate and Joint Ventures		8		—
Loans from Associates and Joint Ventures		1		1
Payables to Joint Ventures		132		228
Payables to Associates		122		96

33 Segment and Related Information

In conjunction with our acquisition of A. Schulman, we formed the Advanced Polymer Solutions business management function for the product lines acquired in the acquisition. In addition, the responsibility for business decisions relating to polypropylene compounding, *Catalloy* and polybutene-1, previously reflected in our O&P–EAI and O&P–Americas segments, were moved to our new Advanced Polymer Solutions business management function. These products are now reflected in our new Advanced Polymer Solutions segment. All comparable periods presented have been revised to reflect this change.

Our operations are managed through six operating segments, as shown below. 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 and co-products, polyethylene and polypropylene.

- *Olefins and Polyolefins–Europe, Asia, International* ("O&P–EAI"). Our O&P–EAI segment produces and markets olefins and co-products, polyethylene, and polypropylene, including polypropylene compounds.

- *Intermediates and Derivatives* ("I&D"). Our I&D segment produces and markets propylene oxide and its derivatives; oxyfuels and related products; and intermediate chemicals such as styrene monomer, acetyls, ethylene oxide and ethylene glycol.

- *Advanced Polymer Solutions* ("APS"). Our APS segment produces and markets compounding and solutions, such as polypropylene compounds, engineered plastics, masterbatches, engineered composites, colors and powders, and advanced polymers, which includes *Catalloy* and polybutene-1

- *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 refined products, including gasoline and distillates.

- *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 therefore we have presented EBITDA for all segments. We define EBITDA as earnings before interest, taxes and depreciation and amortization.

"Other" includes intersegment eliminations and items that are not directly related or allocated to business operations, such as foreign exchange gains or losses and components of pension and other postretirement benefit costs other than service costs. Sales between segments are made primarily at prices approximating prevailing market prices.

Accounting policies for internal reporting are based on US GAAP and are materially similar to those described in Summary of Significant Accounting Policies (See Note 2) except for

Inventories-The Group measures its inventories in accordance with the Last In, First Out ("LIFO") method, which is permitted under U.S. GAAP. According to IAS 2, *Inventories,* the LIFO method is prohibited under IFRS. Therefore, the inventories are measured using the First In, First Out ("FIFO") method for the Consolidated Financial Statements. This inventory measurement difference between the reportable segments and the consolidated information results in different costs of sale and net profit for the period.

Employee Benefits-Under U.S. GAAP, ASC Topic 715, *Compensation-Retirement Benefits* ("ASC 715") requires the interest expense component of pension expense to be calculated as the product of the defined benefit liability and the discount rate. Such interest expense is netted against interest income resulting from the expected rate of return on plan assets applied to 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 that the discount rate, reflecting long-term market expectations, rather than current fluctuations in market conditions. Under IFRS, in accordance with *IAS 19, Employee Benefits,* the Company recognizes a net interest expense (income), which is the product of the net defined benefit liability (asset) and the discount rate, as a component of its pension expense on defined benefit plans.

Under ASC 715, past service cost and actual return on plan assets in excess of expected return are initially recorded in other comprehensive income and subsequently recognized in earnings over the average remaining service period of the participants to the extent it exceeds the "corridor". The corridor is defined as the greater of 10 percent of the accumulated projected benefit obligation or the fair value of the plan assets as of the beginning of the year. Under IFRS, the Company recognizes immediately past service cost and net interest expense (income) as discussed above in the Consolidated Statement of Income. Actual return of plan assets in excess of recognized interest income is permanently recorded in other comprehensive income.

Other-Amongst others, there are minor differences between IFRS and U.S. GAAP with respect to IFRS 11, *Joint Arrangements* as well as discontinued operations, the subsequent measurement of asset retirement obligations, capitalization of development costs related to Research and development and amortization of debt issuance costs. If material, these differences are separately disclosed in the Consolidated Financial Statements reconciliation.

Summarized financial information concerning reportable segments is shown in the following table for the periods presented:

	Year ended 31 December 2018							
Millions of dollars	**O&P – Americas**	**O&P – EAI**	**I&D**	**APS**	**Refining**	**Technology**	**Other**	**Total**
Sales and other operating revenues:								
Customers	$ 6,883	$ 9,984	$ 9,426	$ 4,022	$ 8,221	$ 468	$ —	$ 39,004
Intersegment	3,525	854	162	2	936	115	(5,594)	—
	10,408	10,838	9,588	4,024	9,157	583	(5,594)	39,004
Depreciation and amortization expense	442	208	287	69	192	43	—	1,241
Other income (expense), net	11	48	2	2	3	1	39	106
Income from equity investments	58	225	6	—	—	—	—	289
Capital expenditures	1,079	248	409	62	250	48	9	2,105
EBITDA	2,762	1,163	2,011	400	167	328	36	6,867

	Year ended 31 December 2017							
Millions of dollars	**O&P – Americas**	**O&P – EAI**	**I&D**	**APS**	**Refining**	**Technology**	**Other**	**Total**
Sales and other operating revenues:								
Customers	$ 7,265	$ 9,445	$ 8,346	$ 2,922	$ 6,165	$ 341	$ —	$ 34,484
Intersegment	2,739	773	126	—	683	109	(4,430)	—
	10,004	10,218	8,472	2,922	6,848	450	(4,430)	34,484
Depreciation and amortization expense	433	210	279	35	177	40	—	1,174
Other income (expense), net	42	138	1	(2)	2	—	(2)	179
Income from equity investments	42	271	8	—	—	—	—	321
Capital expenditures	741	163	332	55	213	32	11	1,547
EBITDA	2,899	1,927	1,490	438	157	223	—	7,134

The difference between sales reported and the IFRS income statement and the difference between capital expenditures reported and the IFRS statement of cash flows are caused by the difference in accounting for joint arrangements under IFRS and US GAAP as explained in this note.

Reconciliation of EBITDA for reportable segments to the Company's Consolidated Statement of Income is summarized in the following table:

Millions of U.S. Dollars	Note	31 December 2018	31 December 2017
EBITDA:			
Total segment EBITDA		$ 6,831	$ 7,134
Other EBITDA		36	—
		6,867	7,134
Less:			
Depreciation and amortization expense		(1,241)	(1,174)
Other income (expense), net		(106)	(179)
Income from equity investments		(289)	(321)
U.S. GAAP operating income		5,231	5,460
Measurement difference:			
Inventory valuation		(92)	300
Pension expense		(3)	(41)
Classification difference:			
Other income (expense), net	11	168	33
Joint Arrangements		124	133
Other		(8)	(23)
Total Company's operating profit		$ 5,420	$ 5,862

Long-lived assets include Property, plant and equipment, Intangible assets excluding goodwill and Investments in associates and joint ventures. The following long lived assets data is based upon the location of the assets:

Millions of U.S. Dollars	Long-Lived Assets 2018	Long-Lived Assets 2017
United States	$ 10,353	$ 8,767
Germany	1,559	1,451
The Netherlands	767	782
France	583	569
Italy	367	353
Mexico	255	198
Other	1,724	1,571
Total	$ 15,608	$ 13,691

34 Subsequent Events

In February 2019, LYB Americas Finance Company LLC , a direct, 100% owned finance subsidiary of LyondellBasell Industries N.V., entered into a 364-day, $2,000 million senior unsecured term loan credit facility. The proceeds of this term loan, which are fully and unconditionally guaranteed by LyondellBasell Industries N.V. are intended for general corporate purposes, including the repayment of debt.

Borrowings under the credit agreement will bear interest at either a LIBOR rate or a base rate, as defined, plus in each case, an applicable margin determined by reference to LyondellBasell N.V.'s current credit ratings.

The credit agreement contains customary covenants and warranties, including specified restrictions on indebtedness, including secured and subsidiary indebtedness, and merger and sales of assets. In addition, we are required to maintain a leverage ratio at the end of every fiscal quarter of 3.50 to 1.00 or less.

In February 2019, proceeds from the credit facility were used to redeem the remaining $1,000 million outstanding of our 5% Senior Notes due 2019 at par. In conjunction with the redemption of these notes, we recognized non-cash charges of less than $1 million for the write-off of unamortized debt issuance costs and $8 million for the write-off of the cumulative fair value hedge accounting adjustment related to the redeemed notes.

On 22 February 2019 the Company announced a dividend of $1.00 per share, to be paid 11 March 2019 to shareholders of record 4 March 2019, with an ex-dividend date of 1 March 2019.

On 29 March 2019, LyondellBasell Industries N.V. , as guarantor, and LYB Americas Finance Company LLC, as borrower (the "Borrower"), various financial institutions as lenders, and Bank of America, N.A., as administrative agent, entered into a Three-Year Credit Agreement (the "Credit Agreement"). The Credit Agreement provides for a $4.0 billion senior unsecured delayed draw term loan credit facility that matures on 29 March 2022. Borrowings under the Credit Agreement may be made on up to six occasions between the closing date and 31 December 2019.

The Credit Agreement is undrawn at closing and will be available for general corporate purposes. Borrowings under the Credit Agreement will bear interest at a rate per annum equal to (i) with respect to Eurodollar Rate Loans, LIBOR plus the applicable margin and (ii) with respect to Base Rate Loans, the Base Rate, as defined in the Credit Agreement, plus the applicable margin. The applicable margin is determined by reference to the Company's current credit ratings and will be in the range of 0.875% to 1.750% for Eurodollar Rate Loans and the range of 0% to 0.750% for Base Rate Loans. Currently, the applicable margin that would accrue on any loans under the Credit Agreement is 1.125% for Eurodollar Rate Loans and 0.125% for Base Rate Loans.

The Credit Agreement contains customary representations and warranties of each of the Company and the Borrower. The Credit Agreement requires the Company to maintain a maximum consolidated leverage ratio and contains certain restrictive covenants regarding, among other things, secured indebtedness and subsidiary indebtedness, and mergers and sales of assets, all substantially consistent with our $2,500 million senior unsecured revolving credit facility. The term loans are not subject to any mandatory prepayment requirements, and may be prepaid at the option of the Borrower at any time (subject to customary notice and minimum amount requirements) without premium or penalty.

The Credit Agreement contains customary events of default, including nonpayment of principal when due, nonpayment of interest or other amounts after a customary grace period, violation of covenants (subject, in the case of certain of such covenants, to a 30-day grace period), incorrectness of representations and warranties in any material respect, cross acceleration and cross payment default to material indebtedness, bankruptcy or other insolvency events of the Company or its material subsidiaries (with a customary grace period for involuntary events), material monetary judgments, ERISA events, actual or asserted invalidity of loan documents and changes of control.

Appendix - A

Entity Name	Jurisdiction of Formation
Subsidiaries	
A. Schulman AG	Switzerland
A. Schulman Asia Limited	Hong Kong
A. Schulman Australia Pty Ltd	Australia
A. Schulman Belgium BVBA	Belgium
A. Schulman Canada Ltd.	Ontario
A. Schulman Castellon S.L.	Spain
A. Schulman de Mexico S.A. de C.V.	Mexico
A. Schulman del Peru S.A.C.	Peru
A. Schulman Europe GmbH & Co. KG	Germany
A. Schulman Europe International B.V.	Netherlands
A. Schulman Europe Verwaltungs GmbH	Germany
A. Schulman Gainsborough Ltd	United Kingdom
A. Schulman GmbH	Germany
A. Schulman Holding Company France S.A.S.	France
A. Schulman Holdings (France) S.A.S.	France
A. Schulman Holdings S.à.r.l.	Luxembourg
A. Schulman Inc. Limited	United Kingdom
A. Schulman International Inc.	Delaware
A. Schulman International Services BVBA	Belgium
A. Schulman Ireland Limited	Ireland
A. Schulman Magyarország Kereskedelmi Korlátolt Felelõsségû Társaság	Hungary
A. Schulman Nordic AB	Sweden
A. Schulman Plásticos do Brasil Ltda.	Brazil
A. Schulman Plastics (Branch)	United Arab Emirates
A. Schulman Plastics (Dongguan) Ltd.	China
A. Schulman Plastics (Malaysia) Sdn. Bhd.	Malaysia
A. Schulman Plastics (Suzhou) Co., Ltd.	China
A. Schulman Plastics BVBA	Belgium
A. Schulman Plastics bvba Bornem Sucursala Cluj-Napoca	Romania
A. Schulman Plastics India Private Limited	India
A. Schulman Plastics PTY. LTD.	Australia
A. Schulman Plastics S.r.l.	Italy
A. Schulman Plastics SAS	France
A. Schulman Plast³k Sanayi ve Ticaret Anonim Sirketi	Turkey
A. Schulman Polska Sp. z o.o.	Poland
A. Schulman Real Estate GmbH & Co. KG	Germany
A. Schulman S.à.r.l.	Luxembourg
A. Schulman S.A.S.	France
A. Schulman 's-Gravendeel B.V.	Netherlands
A. Schulman Thermoplastic Compounds Limited	United Kingdom
A. Schulman Thermoplastic Compounds Sdn Bhd	Malaysia
A. Schulman, Inc.	Delaware
A.Schulman Plastics, odštìpný závod	Czech Republic
A.Schulman Poznan Sp. Z o.o.	Poland
AS Global Holdings, Inc.	Delaware
AS Mex Hold S.A. de C.V.	Mexico
AS Worldwide LLC & Cie, S.C.S.	Luxembourg
AS Worldwide, LLC	Delaware
ASI Akron Land Co.	Delaware
ASI Employment S.A. de C.V.	Mexico
ASI Investments Holding Co.	Delaware
Basell (Thailand) Holdings B.V.	Netherlands
Basell Advanced Polyolefins (Dalian) Co. Ltd.	China

Basell Advanced Polyolefins (Suzhou) Co. Ltd.	China
Basell Advanced Polyolefins (Thailand) Company Ltd.	Thailand
Basell Arabie Investissements SAS	France
Basell Asia Pacific Limited	Hong Kong
Basell Bayreuth Chemie GmbH	Germany
Basell Benelux B.V.	Netherlands
Basell Canada Inc.	Ontario
Basell Chemie Köln GmbH	Germany
Basell Deutschland GmbH	Germany
Basell Europe Holdings B.V.	Netherlands
Basell France S.A.S.	France
Basell Germany Holdings GmbH	Germany
Basell Holdings Middle East GmbH	Germany
Basell Ibérica Poliolefinas Holdings S.L.	Spain
Basell International Holdings B.V.	Netherlands
Basell International Trading FZE	United Arab Emirates
Basell Italia S.r.l	Italy
Basell Mexico, S. de R.L. de C.V.	Mexico
Basell Moyen Orient Investissements SAS	France
Basell North America Inc.	Delaware
Basell Poliolefinas Comercial Espagnola S.L.	Spain
Basell Poliolefinas Iberica S.L.	Spain
Basell Poliolefinas Ltda.	Brazil
Basell Poliolefinas, S. de R.L. de C.V.	Mexico
Basell Poliolefine Italia S.r.l.	Italy
Basell Polyolefin Istanbul Ticaret Limited Sirketi	Turkey
Basell Polyolefine GmbH	Germany
Basell Polyolefines France S.A.S.	France
Basell Polyolefins Company BVBA	Belgium
Basell Polyolefins India Private Limited	India
Basell Polyolefins Korea Ltd.	Korea
Basell Polyolefins UK Limited	United Kingdom
Basell Sales & Marketing Company B.V.	Netherlands
Basell Service Company B.V.	Netherlands
Basell Slovakia s.r.o.	Slovakia
Basell Trading (Shanghai) Co. Ltd.	Shanghai
Basell UK Holdings Limited	United Kingdom
Basell UK Ltd.	United Kingdom
BMC Deutschland GmbH	Germany
BMC TetraDURTurkey Plastik Hammadde Kompozit Üretim Sanayi ve Ticaret Limted ªirketi	Turkey
Bulk Molding Compounds do Brasil Industria de Plásticos Reforçados Ltda.	Brazil
Bulk Molding Compounds Mexico, S. de R.L. de C.V.	Mexico
Bulk Molding Compounds, Inc.	Illinois
Citadel Brazil Holdings LLC	Delaware
Citadel Intermediate Holdings, LLC	Delaware
Citadel Plastics Holdings Coöperatief U.A.	Netherlands
Citadel Plastics Holdings, Inc.	Delaware
Citadel Plastics Mexico Holdings, LLC	Delaware
Citadel Plastics Netherlands Holdings, LLC	Delaware
Compagnie de Distribution des Hydrocarbures SAS	France
Compagnie Petrochimique de Berre SAS	France
Elian S.A.S.	France
EMS Holding Ltd.	Ohio
Equistar Bayport, LLC	Delaware
Equistar Chemicals, LP	Delaware
Equistar GP, LLC	Delaware
Equistar LP, LLC	Delaware

Equistar Mont Belvieu Corporation	Delaware
GuangZhou Basell Advanced Polyolefins Co., Ltd.	China
Hadlock Plastics, LLC	Delaware
HGGC Citadel Plastics Holdings, Inc.	Delaware
HGGC Citadel Plastics Intermediate Holdings, Inc.	Delaware
Houston Refining LP	Delaware
HPC Holdings, LLC	Delaware
ICO Europe C.V.	Netherlands
ICO Holdings New Zealand Limited	New Zealand
ICO Holdings, LLC	Texas
ICO Petrochemical Cayman Islands	Cayman
ICO Polymers Cayman Islands	Cayman
Inmobiliaria Satchmo, S. de R.L. de C.V.	Mexico
Innovación Y Desarrollo en Materiales Avanzados, A.C.	Mexico
J.R. Courtenay (N.Z.) Limited	New Zealand
LaPorte Methanol Company, L.P.	Delaware
Limited Liability Company "LyondellBasell Polyolefins"	Russia
Limited Liability Company A. Schulman	Russia
LPI Holding Company	Delaware
Lucent Polymers Inc.	Delaware
LYB (Barbados) SRL	Barbados
LYB Advanced Polymer Solutions Ireland Limited	Ireland
LYB Americas Finance Company LLC	Delaware
LYB Americas Finance Holdings B.V.	Netherlands
LYB Bermuda Ltd.	Bermuda
LYB DISC Inc.	Delaware
LYB Equistar Holdings LLC	Delaware
LYB Export Holdings Limited	United Kingdom
LYB Exports Inc.	Delaware
LYB Finance Company B.V.	Netherlands
LYB International Finance B.V.	Netherlands
LYB International Finance II B.V.	Netherlands
LYB International Finance III LLC	Delaware
LYB Ireland 2 Limited	Ireland
LYB Ireland Limited	Ireland
LYB Luxembourg III S.à .r.l.	Luxembourg
LYB Luxembourg S.à r.l.	Luxembourg
LYB Receivables LLC	Delaware
LYB Trading Company B.V.	Netherlands
LYB Treasury Services Ltd.	United Kingdom
Lyondell Asia Holdings Limited	Hong Kong
Lyondell Centennial Corp.	Delaware
Lyondell Chemical Company	Delaware
Lyondell Chemical Europe, Inc.	Delaware
Lyondell Chemical Overseas Services, Inc.	Delaware
Lyondell Chemical Products Europe LLC	Delaware
Lyondell Chemical Properties, L.P.	Delaware
Lyondell Chemical Technology 1 Inc.	Delaware
Lyondell Chemical Technology Management, Inc.	Delaware
Lyondell Chemical Technology, L.P.	Delaware
Lyondell Chemie (PO-11) B.V.	Netherlands
Lyondell Chemie (POSM) B.V.	Netherlands
Lyondell Chemie Nederland B.V.	Netherlands
Lyondell Chimie France SAS	France
Lyondell China Holdings Limited	Hong Kong
Lyondell France Holdings SAS	France
Lyondell Greater China Holdings Limited	Hong Kong

Lyondell Greater China Trading Limited	China
Lyondell Greater China, Ltd.	Delaware
Lyondell Japan, Inc.	Japan
Lyondell PO-11 C.V.	Netherlands
Lyondell POJVGP, LLC	Delaware
Lyondell POJVLP, LLC	Delaware
Lyondell POTechGP, Inc.	Delaware
Lyondell POTechLP, Inc.	Delaware
Lyondell Refining Company LLC	Delaware
Lyondell Refining I LLC	Delaware
Lyondell South Asia Pte Ltd	Singapore
LyondellBasell Acetyls Holdco, LLC	Delaware
LyondellBasell Acetyls, LLC	Delaware
LyondellBasell Advanced Polyolefins Mexico, S.A. de C.V.	Mexico
LyondellBasell Australia (Holdings) Pty Ltd	Australia
LyondellBasell Australia Pty Ltd	Australia
LyondellBasell Brasil Ltda.	Brazil
LyondellBasell China Holdings B.V.	Netherlands
LyondellBasell Disaster Relief Fund	Delaware
LyondellBasell F&F Holdco, LLC	Delaware
LyondellBasell Finance Company	Delaware
LyondellBasell Holdings France SAS	France
LyondellBasell Industries Holdings B.V.	Netherlands
LyondellBasell Investment LLC	Delaware
LyondellBasell Malaysia Sdn. Bhd.	Malaysia
LyondellBasell Methanol GP, Inc.	Delaware
LyondellBasell Methanol LP, Inc.	Delaware
LyondellBasell Polyolefin (Shanghai) Co., Ltd.	China
LyondellBasell Services France S.A.S.	France
LyondellBasell Subholdings B.V.	Netherlands
LyondellBasell Syrma SAS	France
LyondellBasell Taiwan Co., Ltd.	Taiwan
LyondellBasell Transportation Company LLC	Delaware
OE Insurance Ltd	Bermuda
PO JV, LP	Delaware
PO Offtake, LP	Delaware
POSM II Limited Partnership, L.P.	Delaware
POSM II Properties Partnership LLC	Delaware
Premix Holding Company	Delaware
Premix, Inc.	Ohio
Prime Colorants, Inc.	Tennessee
PT ASchulman Plastics Commercial	Indonesia
PTA. Schulman Plastics	Indonesia
Quantum Composites, Inc.	Ohio
Stichting TopCo, in liquidation	Netherlands
Surplast S.A.	Argentina
Technology JV, LP	Delaware
tetra-DUR Kunststoff-Produktion GmbH	Germany
The Matrixx Group, Incorporated	Indiana
TRV Thermische Rückstandsverwertung GmbH & Co. KG	Germany
TRV Thermische Rückstandsverwertung Verwaltungs-GmbH	Germany
ULSAN PP Co., Ltd.	Korea

Investments in Joint Arrangements

Al-Waha Petrochemicals Ltd.	Kingdom of Saudi Arabia
Basell Orlen Polyolefins Sp. Z.o.o.	Poland
Basell Orlen Polyolefins Sprzedaz Sp. Z.o.o.	Poland
BKV Beteiligungs- und Kunststoffverwertungs-gesellschaft mbH	Germany
BMC Dongguan Limited	China
BMC Far East Limited	Hong Kong
Brindisi Servizi Generali S.c.a.r.l.	Italy
EPS Ethylen-Pipeline-Süd Geschäftsführungs GmbH	Germany
EPS Ethylen-Pipeline-Süd GmbH & Co. KG	Germany
HMC Polymers Company Ltd.	Thailand
I.F.M. S.c.a.r.l.	Italy
Indelpro S.A. de C.V.	Mexico
Infraserv GmbH & Co Knapsack KG	Germany
Infraserv GmbH & Co. Höchst KG	Germany
LyondellBasell Covestro Manufacturing Maasvlakte V.O.F.	Netherlands
Natpet Schulman Specialty Plastic Compounds	Kingdom of Saudi Arabia
Ningbo ZRCC Lyondell Chemical Co. Ltd.	China
Ningbo ZRCC Lyondell Chemical Marketing Co.	China
NOC Asia Ltd.	Hong Kong
Oil Casualty Insurance, Ltd.	Bermuda
Oil Insurance Limited	Bermuda
PD Glycol LP	Texas
Poly Pacific Polymers Sdn. Bhd.	Malaysia
Poly Pacific Pty. Ltd.	Australia
PolyMirae Co. Ltd.	South Korea
PTT Chemical PCL	Thailand
QCP B.V.	Netherlands
QCP Holding B.V.	Netherlands
QCP IP B.V.	Netherlands
Rayong Olefins Co., Ltd.	Thailand
RIGK GmbH Gesellschaft zur Rückführung industrieller and gewerblicher Kunstoffverpackungen mbH	Germany
San Jacinto Rail Limited	Delaware
Saudi Ethylene & Polyethylene Company Ltd.	Kingdom of Saudi Arabia
Saudi Polyolefins Company	Kingdom of Saudi Arabia
SCG ICO Polymers Company Limited	Thailand
Sociedad Espanola De Materiales Plasticos, Semap, S.A.	Spain
Société des Stockages Petroliers du Rhône SA	France

Corporate Financial Statements

CORPORATE STATEMENT OF INCOME

	Year Ended 31 December	
Millions of U.S. Dollars	**2018**	**2017**
Income from Group companies after tax	$ 4,496	$ 4,829
Other income (expense), net of tax	156	235
Profit attributable to the equity holders	$ 4,652	$ 5,064

CORPORATE STATEMENT OF FINANCIAL POSITION

Before appropriation of profit

Millions of U.S. Dollars	**Note**	**31 December 2018**	**31 December 2017**
Non-current assets			
Goodwill	2	$ 322	$ 326
Investments in Group companies	2	10,909	10,341
Long-term loans to Group companies	6	6,010	7,984
Deferred tax assets		3	3
Total non-current assets		17,244	18,654
Current assets			
Receivables from Group companies		48	41
Prepaid expense and other current assets		13	1
Short term loans to Group companies	6	3,974	3,000
Cash and cash equivalents	3	45	38
Total current assets		4,080	3,080
Total assets		**$ 21,324**	**$ 21,734**
Equity	4		
Share capital		$ 22	$ 31
Share premium		10	10,024
Legal reserves		(651)	(743)
Other reserves		5,824	(5,821)
Profit for the year		4,652	5,064
Total equity attributable to equity holders		9,857	8,555
Non-current liabilities			
Long-term debt	5	2,941	3,907
Other long-term liabilities		—	41
Deferred income	7	4,433	2,494
Total non-current liabilities		7,374	6,442
Current liabilities			
Bank overdraft		—	38
Short-term loans from Group companies	6	2,968	6,592
Current Maturities of long term loan	5	988	—
Other liabilities		137	107
Total current liabilities		4,093	6,737
Total equity and liabilities		**$ 21,324**	**$ 21,734**

Notes to the Corporate Financial Statements

1 General

LyondellBasell Industries N.V. (the "Company" or "LyondellBasell N.V."), together with its consolidated subsidiaries (collectively, the "Group") applies the option provided in Section 2:362 (8) of the Dutch Civil Code for the principles applicable to the recognition and measurement of assets and liabilities and the determination of results for its Corporate Financial Statements. Accordingly, the principles for recognition and measurement of assets and liabilities and determination of results (hereinafter referred to as "accounting policies") of the Company's Corporate Statement of Financial Position are the same as those applied for the Consolidated Financial Statements under International Financial Reporting Standards ("IFRS"), as adopted by the European Union, for the periods ended 31 December 2018 and 2017, except as noted below:

- Investments in subsidiaries and other companies in which the Company has control are measured at net asset value, which is based on the net book value of assets, provisions and liabilities, in accordance with the accounting policies applied in the Consolidated Financial Statements.
- Goodwill presented in the Corporate Statement of Financial Position reflects the goodwill of subsidiaries directly acquired by the Company and is measured in accordance with the accounting policies of the Consolidated Financial Statements. Goodwill of subsidiaries indirectly owned (via intermediate subsidiaries) is recognized as part of the net asset value of such intermediate subsidiary.

At 31 December 2018 and 2017, the Company had sixteen and respectively thirteen full-time employees all located outside of The Netherlands.

2 Goodwill and Investments

Millions of U.S. Dollars	Goodwill	Investments
Balance at 1 January 2017	$ 317	$ 11,291
Income from investments, net of tax	—	2,414
Equity settled transactions	—	48
Dividends received	—	(3,645)
Additions to other reserves	9	233
Balance at 31 December 2017	$ 326	$ 10,341
Balance at 1 January 2018	$ 326	$ 10,341
Income from investments, net of tax	—	2,435
Equity settled transactions	—	50
Dividends received	—	(1,902)
Additions to other reserves	(4)	(15)
Balance at 31 December 2018	$ 322	$ 10,909

Equity settled transactions-Equity settled transactions represent share-based compensation granted to directors and employees.

Dividends received—The Company received a cash dividend of $1,364 million from LyondellBasell Subholdings B.V. during the period ended 31 December 2018.

During 2018, the Company received a dividend of $346 million from LyondellBasell Luxemburg III S.a.r.l.

During 2018, the Company received a dividend of $192 million from LYB DISC Inc.

Additions to other reserves—Primarily represents movements for Currency translation differences and remeasurements of post-employment benefits obligations, which are non-distributable.

3 Cash and Cash Equivalents

The Company's cash and cash equivalents are held by its in-house banking unit, LYB Finance Company B.V. The interest rate on the account with LYB Finance Company B.V. is subject to a floating interest rate, based on current market rates. Cash at bank and in-hand are freely disposable. At 31 December 2018, the lending rates were 2.20% and less than one basis point for the U.S. dollar and euro accounts, respectively, and the borrowing rates were 3.60% and 1.25% for the U.S. dollar and euro accounts, respectively. At 31 December 2017, the lending rates were 1.21% and less than one basis point for the U.S. dollar and euro accounts, respectively, and the borrowing rates were 2.61% and 1.25% for the U.S. dollar and euro accounts, respectively.

4 Equity Attributable to Equity Holders

For a breakdown of Equity attributable to equity holders, see table below.

			Legal Reserve		Other reserves			
Millions of US Dollars	**Share Capital**	**Share premium**	**Currency translation differences**	**Group Companies**	**Retained earnings**	**Treasury Shares**	**Profit for the year**	**Total Equity Attributable to equity holders**
Balance as at 1 January 2017	$ 31	$ 10,009	$ (867)	$ (33)	$ 7,128	$ (14,945)	$ 4,192	$ 5,515
Previous year results	—	—	—	—	4,192	—	(4,192)	—
Employee Share based payments:								
-Issuance of shares	—	14	—	—	—	41	—	55
-Tax credits related to share based payments	—	—	—	—	2	—	—	2
Purchase of non-controlling interest	—	1	—	—	—	—	—	1
Shares Purchased	—	—	—	—	—	(845)	—	(845)
Net current period changes	—	—	130	48	—	—	—	178
Profit for the year	—	—	—	—	—	—	5,064	5,064
Additions to legal reserves	—	—	—	(21)	21	—	—	—
Dividend Distribution	—	—	—	—	(1,415)	—	—	(1,415)
Balance as of 31 December 2017	31	10,024	(737)	(6)	9,928	(15,749)	5,064	8,555
Opening Balance adjustment	—	—	—	—	34	—	—	34
Previous year results	—	—	—	—	5,064	—	(5,064)	—
Employee Share based payments:								
-Issuance of shares	—	27	—	—	(2)	37	—	62
-Tax credits related to share based payments	—	—	—	—	(8)	—	—	(8)
Purchase of Non-Controlling interest	—	(28)	—	—	—	—	—	(28)
Shares Purchased	—	—	—	—	—	(1,878)	—	(1,878)
Net current period change	—	—	(94)	197	(79)	—	—	24
Profit/(loss) for the year	—	—	—	—	—	—	4,652	4,652
Release of legal reserves	—	—	—	(11)	11	—	—	—
Common Stock dividends paid	—	—	—	—	(1,554)	—	—	(1,554)
Preferred stock dividends paid	—	—	—	—	(2)	—	—	(2)
Cancellation of Treasury shares	(9)	(10,013)	—	—	(5,362)	15,384	—	—
Balance at 31 December 2018	**$ 22**	**$ 10**	**$ (831)**	**$ 180**	**$ 8,030**	**$ (2,206)**	**$ 4,652**	**$ 9,857**

Share capital—The Company's authorized share capital totals €51 million divided into 1,275 million ordinary shares of €0.04 each. The issued and fully paid up share capital amounted to €15 million divided in 376 million ordinary shares.

The item "Group Companies" relates to the "*Wettelijke reserve deelnemingen,*" which is required by Dutch Law. This reserve relates to any legal or economic restrictions on the ability of group companies to transfer funds to the parent in the form of dividends.

Pursuant to Dutch Law, limitations exist relating to the distribution of share capital of $22 million ($31 million in 2017) and Legal reserves of ($651) million at 31 December 2018 (($743) million in 2017).

In general, gains related to currency translation differences cannot be distributed as part of shareholders' equity as they form part of the legal reserves protected under Dutch Law. By their nature, losses related to currency translation differences and "group companies" reduce shareholders' equity and thereby distributable amounts.

The reconciliation of the Company's retained earnings to those of the Group reflected in the Group's Consolidated Statement of Financial Position is as follows:

	31 December	
Millions of U.S. Dollars	**2018**	**2017**
Retained earnings as per Consolidated Statement of Financial Position	$ 13,100	$ 15,342
Non-distributable reserves of Group companies	(418)	(350)
Profit for the year	(4,652)	(5,064)
Retained earnings as per Corporate Statement of Financial Position	$ 8,030	$ 9,928

Proposed Appropriation of Result—The Board of Directors paid an aggregate dividend of $4.00 per share from its 2018 annual accounts. This included an interim dividend of $1 per share paid to shareholders of record on 5 March 2018, on 11 June 2018, 5 September 2018 and 10 December 2018. These dividend payments, totaling $1,554 million, have been charged to retained earnings.

The Board of Directors will propose that the general meeting approve the dividends already paid, as described above.

5 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%.

5% and 5.75% Senior Notes—In April 2012, the Company 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 March 2017, we redeemed $1,000 million aggregate principal amount of our 5% senior notes due 2019. In April 2018, we re-classified the remaining $1,000 million of the 5% senior notes due 2019 from non-current to current due to maturity in April 2019.

6% Senior Notes-In November 2011, the Company issued $1,000 million of 6% senior notes due 2021. These notes, which mature on 15 November 2021, bear interest at 6% annum.

6 Group Company Loans

The following table summarizes, as of 31 December 2018, the maturities of our Long-Term Loan Receivable from our Subsidiary and Loans Payable to our Subsidiaries for the next five years and thereafter:

Millions of U.S. Dollars	Total	2019	2020	2021	2022	2023	Thereafter
Non-current receivables:							
Senior note receivable due July 2020, $2,000 million	$ 2,000	$ —	$ 2,000	$ —	$ —	$ —	$ —
Senior note receivable due July 2025, $2,000 million	2,000	—	—	—	—	—	2,000
Senior note receivable due July 2026, $500 million	500	—	—	—	—	—	500
Note receivable due April 2024, $986 million	510	—	—	—	—	—	510
Note receivable due November 2021, $1,000 million	1,000	—	—	1,000	—	—	—
Total non-current receivables	$ 6,010	$ —	$ 2,000	$ 1,000	$ —	$ —	$ 3,010
Current receivables:							
Note receivable due April 2019, $1,974 million	1,974	1,974	—	—	—	—	—
Senior note due June 2020, $2,000 million	2,000	2,000	—	—	—	—	—
Total non-current receivables	$ 3,974	$ 3,974	$ —	$ —	$$ —	$ —	$ —
Current payables:							
Loan payable due October 2021, $2,000 million	$ 1,369	$ 1,369	$ —	$ —	$ —	$ —	$ —
Loan payable due February 2019, $7,000 million	99	99	—	—	—	—	—
Loan payable due July 2020, $2,000 million	1,500	1,500	—	—	—	—	—
Total current payables	$ 2,968	$ 2,968	$ —	$ —	$ —	$ —	$ —

Long-Term Loan Receivable from our Subsidiary—In July 2014, we and our wholly owned subsidiary, LyondellBasell Finance Company, entered into five separate notes with an aggregate principal amount of $7,500 million in lieu of a $7,500 million inter-company dividend. These notes consist of a $1,000 million 3.09% senior note due 30 December 2018. The loan has been settled in the current year. $2,000 million 3.75% senior note due 1 July 2018, In May 2018 the maturity of the loan has been extended from 1 July 2018 to 30 June 2020 with a fair value of $1,976 million; a $2,000 million 4.63% senior note due 1 July 2020 with a fair value of $1,975 million; a $2,000 million 6.14% senior note due 1 July 2025 with a fair value of $1,997 million and a $500 million 6.30% senior note due 1 July 2026 with a fair value of $501 million.

In April 2012, we and our indirectly wholly owned subsidiary, Lyondell Chemical Company ("Lyondell Chemical"), entered into a $1,974 million note receivable. The note bears per annum interest at 5.47% and matures on 15 April 2019. Interest is due semi-annually on 15 April and 15 October. In July 2012, we amended the terms of the note to include early prepayment restrictions and reduce the applicable interest. Lyondell Chemical may prepay all or part of the note at a specified redemption premium plus accrued and unpaid interest on the redemption date. At 31 December 2018 and 2017, the outstanding balance was $1,974 million which approximates the fair value.

In April 2012, we and Lyondell Chemical entered into another $986 million note receivable. The note bears per annum interest at 6.14% and matures on 15 April 2024. Interest is due semi-annually on 15 April and 15 October. In July 2012, we amended the terms of the note to include early prepayment restrictions and reduce the applicable interest. Lyondell Chemical may prepay all or part of the note at a specified redemption premium plus accrued and unpaid interest on the redemption date. In December 2017 an amount of $476 million was repaid. As at 31 December 2018 the balance remaining on the loan is $510 million with a fair value of $544 million.

In November 2011, we and Lyondell Chemical entered into a $1,000 million note receivable. The note bears interest at 6.45% per annum and matures on 15 November 2021. Interest is due semi-annually on 15 May and 15 November. In July 2012, the terms of the note were amended to include early prepayment restrictions. Lyondell Chemical may prepay all or part of the note at a specified redemption premium plus accrued and unpaid interest on the redemption date. At 31 December 2018 and 2017, the outstanding balance was $1,000 million with a fair value of $1,057 million.

Loans Payable to our Subsidiaries—In October 2015, we and our indirect, wholly owned subsidiary, LYB Treasury Services Ltd., entered into a $2,000 million loan, which matures on 6 October 2018. The loan is repayable on demand. In October 2018 the repayment date was extended to 6 October 2021, all other terms of the loan remain unchanged.The loan bears interest at a variable rate, which is set for a period of 3 months, using the U.S. LIBOR rate, plus 125 basis points. At 31 December 2018, the outstanding balance was $1,369 million which approximates the fair value.

In February 2015, we and our indirect, wholly owned subsidiary, LYB Americas Finance Company, entered into a $5,000 million loan, which matures on 1 February 2017. The loan is repayable on demand. The interest rate is equal to the Federal short-term rate determined under section 1274(d) of the Internal Revenue Code. In January 2017 the maximum amount was increased from $5,000 million to $7,000 million and the repayment date extended to 1 February 2019. All other terms of the loan remain unchanged. At 31 December 2018, the outstanding balance was $99 million which approximates the fair value.

In July 2014, we and our indirect, wholly owned subsidiary, LYB Americas Finance Company, entered into a $2,000 million loan, which matures on 31 July 2018. In June 2018 the repayment date was extended to July 2020, all other terms and conditions of the loan remains the same. The loan is repayable on demand. The interest rate is equal to the Federal short-term rate determined under section 1274(d) of the Internal Revenue Code. At 31 December 2018, the outstanding balance was $1,500 million which approximates the fair value.

Movements in Group company loans are presented below:

Millions of U.S. Dollars	Receivables	Payables
Balance at 1 January 2017	$ 11,460	$ 7,740
Borrowings	—	—
Discharge and assignments	(476)	(1,148)
Balance at 31 December 2017	10,984	6,592
Of which:		
Non-current	7,984	—
Current	3,000	6,592
Balance at 31 December 2017	$ 10,984	$ 6,592
Balance at 1 January 2018	$ 10,984	$ 6,592
Borrowings	—	—
Discharge and assignments	(1,000)	(3,624)
Balance at 31 December 2018	9,984	2,968
Of which:		
Non-current	6,010	—
Current	3,974	2,968
Balance at 31 December 2018	$ 9,984	$ 2,968

7 Deferred Income

Deferred income represents the excess dividend paid by LyondellBasell Finance Company over its net asset value. This amount is reduced as the Company recognizes its share of LyondellBasell Finance Company's income. After the Deferred income is fully recognized, we will record our earnings from LyondellBasell Finance Company as additions to Investments in Group companies.

The movement in Deferred income, summarized below, represents our share of LyondellBasell Finance Company profit.

Millions of U.S. Dollars	2018
Balance at 1 January 2018	$ 2,494
Dividends from Group Companies paid in excess of net asset value	4,000
Income from Group Companies, net of tax	(2,061)
Balance at 31 December 2018	$ 4,433

8 Commitments and Contingencies not included in the Balance Sheet

The Company has entered into guarantee agreements with counterparties on behalf of some of its subsidiaries for the supply of raw materials. At 31 December 2018 and 2017, the total guaranteed amount was $25.1 billion, respectively.

The Company receives an annual fee of 0.13% for guarantees of aggregate $2 billion and an annual fee between 0.17% and 0.19% for all other outstanding guarantees as of 31 December 2018. Fee levels applied in 2017 were an annual fee of 0.13% for guarantees of aggregate $6 billion and an annual fee of 0.17% for all other outstanding guarantees.

The Company is jointly and severally liable, as intended in article 403, Book2, of the Dutch Civil Code for the following subsidiaries in the Consolidated Financial Statements:

- LyondellBasell Subholdings B.V.
- LYB Americas Finance Holdings B.V.
- LYB International Finance B.V.
- LYB International Finance II B.V.
- Basell International Holdings B.V.
- Basell Europe Holdings B.V.
- LyondellBasell Industries Holdings B.V.
- LYB Trading Company B.V.
- LyondellBasell China Holdings B.V.

9 Independent Auditor's Fees

The fees listed below relate to the procedures applied to the Company and its consolidated group entities by PricewaterhouseCoopers Accountants N.V., The Netherlands, the external independent auditor as referred to in section 1(1) of the Dutch Accounting Firms Oversight Act (Dutch acronym: Wta), as well as by other Dutch and foreign-based PricewaterhouseCoopers individual partnerships and legal entities, including their tax services and advisory groups.

	Year Ended 31 December	
Millions of U.S. Dollars	**2018**	**2017**
Financial statements audit fees	$ 10.4	$ 9.0
Other assurance fees	0.6	0.6
All other fees	1.2	0.2
	$ 12.2	$ 9.8

The total audit fees of PricewaterhouseCoopers Accountants N.V, The Netherlands, charged to the Company and its consolidated group entities amounted to $1.8 million and $2.0 million, respectively, in 2018 and 2017.

The financial statements audit fees above include the aggregate fees billed for professional services rendered for the audit of LyondellBasell Industries N.V.'s annual financial statements, annual statutory financial statements of subsidiaries and services that are normally provided by the independent auditor in connection with these audits. This category also includes services such as comfort letters, statutory audits, attest services, consents and assistance with and review of documents.

The other assurance fees include the aggregate fees billed for assurance and related services that are reasonably related to the performance of the audit or review of the Group's financial statements and are not reported under audit services. This category includes fees related to the performance of audits of benefit plans, agreed-upon or expanded audit procedures relating to accounting records required to respond to or comply with financial, accounting or regulatory reporting matters and consultations as to the accounting or disclosure treatment of transactions or events and/or the actual or potential impact of final or proposed rules, standards or interpretations by regulatory or standard setting bodies.

Other fees relate to permitted services that are not included in the above categories.

10 Directors' Remuneration

Reference is made to Note 10, Remuneration of the Board of Directors of the Consolidated Financial Statements.

London, 10 April 2019

The Board of Directors

/s/ Bhavesh (Bob) V. Patel	/s/ Jacques Aigrain
Bhavesh (Bob) V. Patel	Jacques Aigrain
/s/ Lincoln Benet	/s/ Jagjeet S. Bindra
Lincoln Benet	Jagjeet S. Bindra
/s/ Robin W.T. Buchanan	/s/ Stephen F. Cooper
Robin W.T. Buchanan	Stephen F. Cooper
/s/ Nance K. Dicciani	/s/ Claire S. Farley
Nance K. Dicciani	Claire S. Farley
/s/ Isabella D. Goren	/s/ Michael S. Hanley
Isabella D. Goren	Michael S. Hanley
/s/ Bruce A. Smith	/s/ Rudy M.J. van der Meer
Bruce A. Smith	Rudy M.J. van der Meer

Other Information

Proposed Appropriation of Result

Profit remaining after the appropriation to reserves shall be at the disposal of the general meeting (article 22 sub 3 Articles of Association). The Board of Directors may also appropriate the complete profit to the reserves.

Legal Structure

The list of our subsidiaries and associates is available at the Chamber of Commerce in Rotterdam, The Netherlands.

Independent auditor's report

To: the general meeting and the Board of Directors of LyondellBasell Industries N.V.

Report on the financial statements 2018

Our opinion

In our opinion:

- LyondellBasell Industries N.V.'s consolidated financial statements give a true and fair view of the financial position of the Group as at 31 December 2018 and of its result and cash flows for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union (EU-IFRS) and with Part 9 of Book 2 of the Dutch Civil Code;

- LyondellBasell Industries N.V.'s corporate financial statements give a true and fair view of the financial position of the Company as at 31 December 2018, and of its result for the year then ended in accordance with Part 9 of Book 2 of the Dutch Civil Code.

What we have audited

We have audited the accompanying financial statements 2018 of LyondellBasell Industries N.V., Rotterdam ('the Company'). The financial statements include the consolidated financial statements of LyondellBasell Industries N.V. together with its subsidiaries ('the Group') and the corporate financial statements.

The consolidated financial statements comprise:

- the consolidated statement of financial position as at 31 December 2018;
- the following statements for 2018: the consolidated statement of income, the consolidated statement of other comprehensive income, the consolidated statement of changes in equity and cash flows; and
- the notes, comprising a summary of the significant accounting policies and other explanatory information.

The corporate financial statements comprise:

- the corporate statement of financial position as at 31 December 2018;
- the corporate statement of income for the year then ended;
- the notes, comprising a summary of the accounting policies and other explanatory information.

The financial reporting framework applied in the preparation of the financial statements is EU-IFRS and the relevant provisions of Part 9 of Book 2 of the Dutch Civil Code for the consolidated financial statements and Part 9 of Book 2 of the Dutch Civil Code for the corporate financial statements.

The basis for our opinion

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing. We have further described our responsibilities under those standards in the section 'Our responsibilities for the audit of the financial statements' of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We are independent of LyondellBasell Industries N.V. in accordance with the 'Wet toezicht accountantsorganisaties' (Wta, Audit firms supervision act), the 'Verordening inzake de onafhankelijkheid van accountants bij assuranceopdrachten' (ViO – Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence requirements in the Netherlands. Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA – Code of Ethics for Professional Accountants, a regulation with respect to rules of professional conduct).

Our audit approach

Overview and context

LyondellBasell Industries 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 production of polymers. The business operations are subject to the cyclical and volatile nature of the chemicals industry which causes fluctuations in the results from period to period and over business cycles.

The chemicals industry has historically experienced periods of capacity shortages, causing prices and profit margins to increase, followed by periods of excess capacity, resulting in oversupply and declining prices and profit margins. The volatility of results affected our determination of materiality as set out in the materiality section of our report.

The Company completed the acquisition of A. Schulman Inc., a leading global supplier of high-performance plastic compounds, composites and powders on 21 August 2018.

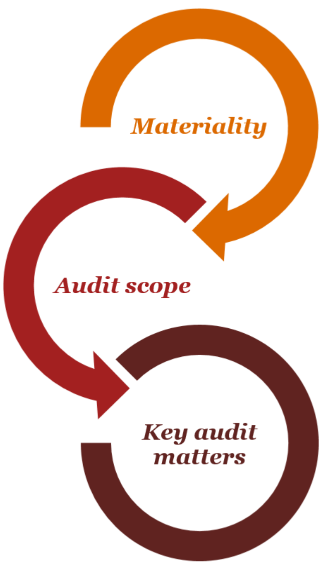
The Group is comprised of several components and therefore we considered our group audit scope and approach as set out in the section 'The scope of our group audit'. We paid specific attention to the areas of focus driven by the operations of the Group, as set out above.

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we considered where the Board of Directors made important judgements, for example, in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. In note 3 of the consolidated financial statements, the Company describes the areas of judgment in applying accounting policies and the key sources of estimation uncertainty.

We consider the acquisition of A. Schulman Inc. a key audit matter for this financial year. Other areas of focus, that were not considered to be key audit matters, were capitalization of assets, inventory costing, revenue recognized at or near year-end and derivative financial instruments. As in all of our audits, we also addressed the risk of management override of internal controls, including evaluating whether there was evidence of bias by the management board that may represent a risk of material misstatement due to fraud.

We ensured that the audit teams both at group and at component levels included the appropriate skills and competences which are needed for the audit. We included specialists and experts in the areas of actuarial expertise, tax, valuation and financial instruments in our team.

The outline of our audit approach was as follows:



Materiality

- Overall materiality: USD 260 million.

Audit scope

- We conducted audit work in 4 geographical locations: the Netherlands, United States of America, Germany and Italy.
- Within these 4 locations we performed an audit of the complete financial information of 4 components and specified audit procedures for 12 other components.
- We performed a site visit to 3 locations: United States of America, the Netherlands and France.
- Audit coverage: 84% of consolidated revenue, 83% of consolidated total assets and 94% of consolidated profit before tax.

Key audit matters

- Acquisition of A. Schulman Inc.

Materiality

The scope of our audit is influenced by the application of materiality, which is further explained in the section ‘Our responsibilities for the audit of the financial statements’.

Based on our professional judgment, we determined certain quantitative thresholds for materiality, including the overall materiality for the financial statements as a whole as set out in the table below. These, together with qualitative considerations, helped us to determine the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and to evaluate the effect of identified misstatements, both individually and in aggregate, on the financial statements as a whole and on our opinion.

Overall group materiality	USD 260 million (2017: USD 280 million).
Basis for determining materiality	We used our professional judgment to determine overall materiality. As a basis for our judgment we used 5% of the three-year average of profit before income tax based on the US GAAP consolidated financial statements as filed through Form 10-K.

Rationale for benchmark applied	We used profit before income tax as the primary benchmark, a generally accepted auditing practice, based on our analysis of the common information needs of users of the financial statements. On this basis, we believe that profit before tax is an important metric for the financial performance of the Company. The Company uses two accounting frameworks for calculating profit before tax: • The financial reporting frameworks that have been applied in the preparation of the financial statements are EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code; • The Accounting principles generally accepted in the United States of America (US GAAP) have been applied for the quarterly and annual earnings releases, and the financial statements filed with the United States Securities and Exchange Commission. Both US GAAP and EU-IFRS are applied in maintaining the daily operational accounting records. In addition, we believe that the users of financial information of the Company are primarily interested in the consolidated financial information based on US GAAP. Any user of these consolidated financial statements (EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code) would likely not review this information in isolation; if users did review this information we expect it would likely be in supplement to the US GAAP financial information. The result of the benchmark applied using US GAAP figures is materially consistent with the result had the EU-IFRS figures been applied as a benchmark. Therefore, for the audit of these consolidated financial statements (EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code) we have applied a percentage on a generally accepted auditing practice benchmark on the profit before tax based on US GAAP. We have applied a three-year average of the profit before income tax as the Company's operations are subject to the cyclicality and volatility of the chemicals industry, hence operating results may vary substantially over the years.
Component materiality	To each component in our audit scope, we, based on our judgement, allocate materiality that is less than our overall group materiality. The range of materiality allocated across components was between USD 39 million and USD 260 million.

We also take misstatements and/or possible misstatements into account that, in our judgement, are material for qualitative reasons.

We agreed with the Board of Directors that we would report to them misstatements identified during our audit above USD 13 million (2017: USD 14 million) as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

The scope of our group audit

LyondellBasell Industries N.V. is the parent company of a group of entities. The financial information of this group is included in the consolidated financial statements of LyondellBasell Industries N.V.

We tailored the scope of our audit to ensure that we performed sufficient work to be able to give an opinion on the financial statements as a whole, taking into account the management structure of the

Group, the nature of operations of its components, the accounting processes and controls, and the markets in which the components of the Group operate.

In establishing the overall group audit strategy and plan, we determined the type of work required to be performed at the component level by the group engagement team and by each component auditor.

The group audit scoping primarily focused on four significant components, located in the United States of America and the Netherlands. Twelve components, accounted for in the United States of America, Germany, Italy and the Netherlands, were subject to specified audit procedures relating to significant balances and transactions or higher risk areas. In total, in performing these procedures, we achieved the following coverage on the financial line items:

Revenue	84%
Total assets	83%
Profit before tax	94%

None of the remaining components represented more than 3% of total group revenue or total group assets. For those remaining components we performed, among other things, analytical procedures to corroborate our assessment that there were no significant risks of material misstatements within those components.

For group entities located in the Netherlands the group engagement team performed the audit work. For components located in Germany and the United States of America, we used component auditors who are familiar with the local laws and regulations to perform the audit work.

Where component auditors performed the work, we determined the level of involvement we needed to have in their audit work to be able to conclude whether we had obtained sufficient appropriate audit evidence as a basis for our opinion on the consolidated financial statements as a whole.

We issued instructions to the component audit teams in our audit scope. These instructions included amongst others our risk analysis, materiality and scope of the work. We explained to the component audit teams the structure of the group, the main developments that are relevant for the component auditors, the risks identified, the materiality levels to be applied and our global audit approach. We visited the component teams in the United States of America, the Netherlands and France to review their audit files and reports about their findings. In addition, we had individual calls with each of the in-scope component audit teams during the year including upon the conclusion of their work. During these calls, we discussed the significant accounting and audit issues identified by the component auditors, the reports of the component auditors, the findings of their procedures and other matters, which could be of relevance for the consolidated financial statements.

By performing the procedures above at components, combined with additional procedures at group level, we have been able to obtain sufficient and appropriate audit evidence on the Group's financial information, as a whole, to provide a basis for our opinion on the financial statements.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in the audit of the financial statements. We have communicated the key audit matter to the Board of Directors. The key audit matter is not a comprehensive reflection of all matters identified by our audit and that we discussed. In this section, we described the key audit matter and included a summary of the audit procedures we performed on this matter.

We addressed the key audit matter in the context of our audit of the financial statements as a whole, and in forming our opinion thereon. We do not provide separate opinions on this matter or on specific elements of the financial statements. Any comments or observations we made on the results of our procedures should be read in this context.

In the prior year, we determined the consideration of the 2017 "Tax Cuts and Jobs Act" enactment as a key audit matter. This was a result of the timing of the 2017 Tax Cuts and Jobs Act as well as the significant attention given and impact on the financial statements of this act. As the implications of this item on the financial statements have been dealt with in the previous year, this is no longer considered to be a key audit matter.

Key audit matter	***How our audit addressed the matter***
Acquisition of A. Schulman Inc. *Note 5* The Company acquired all of the outstanding common stock of A. Schulman Inc. ("Schulman") for an aggregate purchase price of approximately $1,940 million. The Schulman acquisition was accounted for in accordance with IFRS 3 'Business Combinations' as an acquisition of a business. The Company allocated the purchase price based on the fair value of assets and liabilities acquired and redeemable non-controlling interests and non-controlling interests assumed on the acquisition date with the residual amount allocated to goodwill. As a result of the allocation, the Company recorded $505 million of intangible assets, which included primarily customer relationships, trade names and trademarks, and know-how, and $1,271 million of goodwill. Given the subjectivity of management judgments and estimates utilized to determine the fair value, especially related to intangible assets, we performed additional procedures in this area. We consider the acquisition of Schulman to be a key audit matter because: • It relates to a significant unusual transaction; • Significant auditor judgment was required in evaluating audit evidence relating to the significant	We assessed and tested the design and operating effectiveness of controls over the accounting for this business combination, including: • An understanding and evaluation of management's process for developing the inputs used in the models; • The development of the significant estimates and assumptions related to future net cash flows; • The application of the appropriate accounting policy for the acquired assets and liabilities, the review of the purchase agreement to understand possible adjustments to the purchase price, the review of the expert's valuation report to verify the completeness and accuracy of provided inputs applied in the models as well as the reasonableness of the results of the valuation; and • The preparation and approval of the journal entries to record the acquisition. We found the controls above to be properly designed and operating effectively to support our intended reliance. In addition, we have performed the following substantive testing procedures:

Key audit matter	How our audit addressed the matter
assumptions used, such as future net cash flows, including net sales, and discount rates; and • Our audit effort included the involvement of individuals with specialized skills and knowledge in valuations.	• We obtained and read the merger agreement; • We evaluated the completeness of the assets acquired and liabilities assumed as presented in the purchase price allocation, by using the previously audited financial statements of Schulman; and • We vouched the cash payment transferred as part of the purchase consideration. We, together with individuals with specialized skills and knowledge in valuations, performed the following procedures: • We assessed whether the methodology and the appropriateness of the valuation models used by management were based on generally accepted industry practices; • We tested the mathematical accuracy of the company's models by performing a recalculation; • We evaluated and challenged management's key assumptions and underlying data in the models, such as projected net sales, cost of products sold, selling and marketing costs, working capital/contributory asset charges, attrition rate, an applied royalty rate, and the discount rate by considering past performance of the acquired company and comparing trends with external industry analysis and considered them consistent with evidence obtained in other areas of the audit; and • We considered the nature of any evidence contrary to the assumptions used by management. Finally, we evaluated the sufficiency of the related disclosures and found them to be appropriate and in line with the requirements of the accounting framework.

Report on the other information included in the annual report

In addition to the financial statements and our auditor's report thereon, the annual report contains other information that consists of:

- the report of the Board of Directors;
- governance and compliance paragraph, including the report by the Board of Directors;
- the other information pursuant to Part 9 of Book 2 of the Dutch Civil Code.

Based on the procedures performed as set out below, we conclude that the other information:

- is consistent with the financial statements and does not contain material misstatements;
- contains the information that is required by Part 9 of Book 2 of the Dutch Civil Code.

We have read the other information. Based on our knowledge and understanding obtained in our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements.

By performing our procedures, we comply with the requirements of Part 9 of Book 2 of the Dutch Civil Code and the Dutch Standard 720. The scope of such procedures was substantially less than the scope of those performed in our audit of the financial statements.

The Board of Directors is responsible for the preparation of the other information, including the Board of Directors' report and the other information in accordance with Part 9 of Book 2 of the Dutch Civil Code.

Report on other legal and regulatory requirements

Our appointment

We were reappointed as auditors of LyondellBasell Industries N.V. following the passing of a resolution by the shareholders at the annual meeting held on 1 June 2018. The Board of Directors had proposed the auditor appointment in their meeting held 5 April 2018. The appointment has been renewed annually by shareholders representing a total period of uninterrupted engagement appointment of 9 years.

Responsibilities for the financial statements and the audit

Responsibilities of the Board of Directors for the financial statements

The Board of Directors is responsible for:

- the preparation and fair presentation of the financial statements in accordance with EU-IFRS and with Part 9 of Book 2 of the Dutch Civil Code; and for
- such internal control as the Board of Directors determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

As part of the preparation of the financial statements, the Board of Directors is responsible for assessing the company's ability to continue as a going concern. Based on the financial reporting frameworks mentioned, the Board of Directors should prepare the financial statements using the going-concern basis of accounting unless the Board of Directors either intends to liquidate the company or to cease operations, or has no realistic alternative but to do so. The Board of Directors should disclose events and circumstances that may cast significant doubt on the company's ability to continue as a going concern in the financial statements.

The Board of Directors is responsible for overseeing the company's financial reporting process.

Our responsibilities for the audit of the financial statements

Our responsibility is to plan and perform an audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence to provide a basis for our opinion. Our audit opinion aims to provide reasonable assurance about whether the financial statements are free from material misstatement. Reasonable assurance is a high but not absolute level of assurance, which makes it possible that we may not detect all misstatements. Misstatements may arise due to fraud or error. They are considered to be material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

Materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

A more detailed description of our responsibilities is set out in the appendix to our report.

Utrecht, 10 April 2019
PricewaterhouseCoopers Accountants N.V.

A.C.M. van der Linden RA

Appendix to our auditor's report on the financial statements 2018 of LyondellBasell Industries N.V.

In addition to what is included in our auditor's report, we have further set out in this appendix our responsibilities for the audit of the financial statements and explained what an audit involves.

The auditor's responsibilities for the audit of the financial statements

We have exercised professional judgement and have maintained professional scepticism throughout the audit in accordance with Dutch Standards on Auditing, ethical requirements and independence requirements. Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error. Our audit consisted, among other things of the following:

- Identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud or error, designing and performing audit procedures responsive to those risks, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the intentional override of internal control.
- Obtaining an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.
- Evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board of Directors.
- Concluding on the appropriateness of the Board of Directors' use of the going concern basis of accounting, and based on the audit evidence obtained, concluding whether a material uncertainty exists related to events and/or conditions that may cast significant doubt on the company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report and are made in the context of our opinion on the financial statements as a whole. However, future events or conditions may cause the company to cease to continue as a going concern.
- Evaluating the overall presentation, structure and content of the financial statements, including the disclosures, and evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Considering our ultimate responsibility for the opinion on the company's consolidated financial statements, we are responsible for the direction, supervision and performance of the group audit. In this context, we have determined the nature and extent of the audit procedures for components of the group to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole. Determining factors are the geographic structure of the group, the significance and/or risk profile of group entities or activities, the accounting processes and controls, and the industry in which the group operates. On this basis, we selected group entities for which an audit or review of financial information or specific balances was considered necessary.

We communicate with the Board of Directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We provide the Board of Directors with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Board of Directors, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, not communicating the matter is in the public interest.