Investor Day

Value-Driven Growth

New York Stock Exchange
April 5, 2017

Building for the Future
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<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<td>11:30 – 12:30</td>
<td>Lunch</td>
<td>Management Team</td>
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<tr>
<td>12:30</td>
<td>Welcome and Agenda</td>
<td>Dave Kinney</td>
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<tr>
<td>12:40</td>
<td>Value-Driven Growth</td>
<td>Bob Patel</td>
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<tr>
<td>1:15</td>
<td>Value-Driven Growth</td>
<td>Thomas Aebischer</td>
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<td>1:45</td>
<td>Q&amp;A</td>
<td>Bob Patel and Thomas Aebischer</td>
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<td>2:00</td>
<td>Break</td>
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<td>2:15</td>
<td>Olefins and Polyolefins – Overview</td>
<td>Bob Patel</td>
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<td>2:30</td>
<td>Olefins and Polyolefins - Americas</td>
<td>Paul Augustowski</td>
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<td>2:55</td>
<td>Olefins and Polyolefins - EAI</td>
<td>Richard Roudeix</td>
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<td>3:20</td>
<td>Intermediates &amp; Derivatives</td>
<td>Jim Guilfoyle</td>
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<tr>
<td>3:45</td>
<td>Refining, Manufacturing, Projects</td>
<td>Dan Coombs</td>
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<tr>
<td>4:10</td>
<td>Concluding Remarks</td>
<td>Bob Patel</td>
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<tr>
<td>4:30</td>
<td>Q&amp;A</td>
<td>Management Team</td>
</tr>
<tr>
<td>5:00</td>
<td>Reception: Cocktails/Hors d’oeuvres</td>
<td>Management Team</td>
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</table>
The statements in this presentation relating to matters that are not historical facts are forward-looking statements. These forward-looking statements are based upon assumptions of management which are believed to be reasonable at the time made and are subject to significant risks and uncertainties. Actual results could differ materially based on factors including, but not limited to, the business cyclicality of the chemical, polymers and refining industries; the availability, cost and price volatility of raw materials and utilities, particularly the cost of oil, natural gas, and associated natural gas liquids; competitive product and pricing pressures; labor conditions; our ability to attract and retain key personnel; operating interruptions (including leaks, explosions, fires, weather-related incidents, mechanical failure, unscheduled downtime, supplier disruptions, labor shortages, strikes, work stoppages or other labor difficulties, transportation interruptions, spills and releases and other environmental risks); the supply/demand balances for our and our joint ventures’ products, and the related effects of industry production capacities and operating rates; our ability to achieve expected cost savings and other synergies; our ability to successfully execute projects and growth strategies; legal and environmental proceedings; tax rulings, consequences or proceedings; technological developments, and our ability to develop new products and process technologies; potential governmental regulatory actions; political unrest and terrorist acts; risks and uncertainties posed by international operations, including foreign currency fluctuations; and our ability to comply with debt covenants and service our debt. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the “Risk Factors” section of our Form 10-K for the year ended December 31, 2016, which can be found at www.lyondellbasell.com on the Investor Relations page and on the Securities and Exchange Commission’s website at www.sec.gov.

The illustrative results or returns of growth projects are not in any way intended to be, nor should they be taken as, indicators or guarantees of performance. The assumptions on which they are based are not projections and do not necessarily represent the Company’s expectations and future performance. You should not rely on illustrated results or returns or these assumptions as being indicative of our future results or returns.

This presentation contains time sensitive information that is accurate only as of the date hereof. Information contained in this presentation is unaudited and is subject to change. We undertake no obligation to update the information presented herein except as required by law.

Reconciliations for our non-GAAP measures can be found in the Appendix to this presentation or on our website at www.lyb.com/investorrelations.
Investor Day

Value-Driven Growth

Bob Patel
Chief Executive Officer

New York Stock Exchange
April 5, 2017

Building for the Future
LyondellBasell Today

**Financials**

- **$29.2 B**
  - 2016 Revenue

- **$6.6 B**
  - 2016 EBITDA Ex. LCM $^{(1)}$

- **$9.20**
  - 2016 Diluted EPS Ex. LCM

- **$3.4 B**
  - 2016 Free Cash Flow

**Segments**

- Olefins & Polyolefins
  - Americas
- Olefins & Polyolefins
  - Europe, Asia, International
- Intermediates & Derivatives
- Refining
- Technology

---

(1) LCM stands for “lower of cost or market.” Further detail regarding LCM adjustments can be found in the Appendix.
Leading Scale and Market Positions

**2016 EBITDA**

- **SABIC**
- **BASF**
- **Dow Chemical**
- **LyondellBasell**
- **DuPont**
- **Evonik**
- **Covestro**
- **Eastman**
- **Celanese**
- **Westlake**
- **Huntsman**
- **CF Industries**
- **Olin Corp**
- **Trinseo**
- **Methanex**

USD, billions: 2 4 6 8 10 $12

**Global Market Positions**

- **Chemicals**
  - Ethylene: #5
  - Propylene: #6
  - Propylene Oxide: #2

- **Polymers**
  - Polyolefins (PE and PP): #3
  - Polypropylene: #2
  - Polyethylene: #6
  - Polypropylene Compounds: #1

- **Oxyfuels**
  - MTBE and ETBE: #1

- **Technology and R&D**
  - Polyolefins Licensing: #1

---

(1) LYB EBITDA is ex. LCM. LCM is denoted by the orange section of the LYB bar. Source for others: FactSet.
(2) Source: IHS, LYB. Reflects market positions of chemical-grade and polymer-grade propylene (not refinery-grade).
Significant Global Footprint

North America
- USA
- Illinois
- Iowa
- Louisiana
- Michigan
- New Jersey
- Ohio
- Tennessee
- Texas
- Houston
- Mexico

Europe
- France
- Germany
- Italy
- Netherlands
- Rotterdam
- Poland
- Spain
- UK
- London

Middle East
- Saudi Arabia

South America
- Brazil

Asia Pacific
- Australia
- China
- Hong Kong
- India
- Malaysia
- South Korea
- Thailand

Legend
- Administrative Offices / Headquarters
- Manufacturing
- Technology Centers
- Joint Ventures
- Countries where our products are sold

We manufacture at 55 sites across 17 countries. Our products are sold in approximately 100 countries (shaded dark blue).

More than half of our 13,000 employees are outside the U.S.
Experienced Team

Bob Patel
- Chief Executive Officer and Chairman of Management Board
- 29 years of petrochemical experience

Thomas Aebischer
- Executive Vice President, Chief Financial Officer, Member of Management Board
- 34 years of financial experience

Paul Augustowski
- Senior Vice President, Olefins & Polyolefins, Americas
- 35 years of petrochemical experience

Dan Coombs
- Executive Vice President, Global Manufacturing, Projects, Refining and Technology
- Member of Management Board
- 39 years of petrochemical experience

Jim Guilfoyle
- Senior Vice President, Global Intermediates & Derivatives and Global Supply Chain
- Member of Management Board
- 24 years of petrochemical experience

Richard Roudeix
- Senior Vice President, Olefins & Polyolefins, Europe, Asia and International
- 30 years of petrochemical experience

Over 190 years of relevant experience
LyondellBasell Followed a Methodical Path

2010

1. Formation

2. Establishment

3. Development

2016

Capabilities

Establish and Stabilize Culture and Systems

Optimize Footprint

Rapid Capture of Latent Opportunities

Manage Costs

Increase Profitability

Increase Cash Flow

Building for the Future
Guided by a Clear and Value-Oriented Strategy

- Achieve Top Quartile Operations
- Practice Relentless Cost Discipline
- Prudent Financial Stewardship
- Pursue Profitable Organic Growth
- Capture Opportunities In Cycles
Focus on Safety Drives Highly Reliable Operations

LYB Total Recordable Incident Rate

LYB Indexed Process Safety / Environmental Incidents

Strong Reliability
2016 Operating Rates

(1) Injuries per 200,000 hours. Includes employees and contractors. ACC is American Chemistry Council.

(2) Excludes the impact of turnarounds.
Strong Operations Coupled with Cost Discipline and Productivity

SG&A % of Revenue

2016 SG&A % of Revenue

# of Employees

2016 EBIT per Employee\(^{(1)}\)

Source: FactSet and LYB.

(1) LYB EBIT is income from continuing operations before income tax.

Building for the Future
Performance Rigorously Benchmarked
Employees Aligned with Shareholders

**Short-Term Incentive Program** aligned with annual performance goals...

- 60% Business Results
- 20% Cost Discipline
- 20% HS&E Performance

**Long-Term Incentive Program** tied to differentiated performance over 3-year horizon

- Prior to 2016
  - Cost discipline
  - Return on assets

- 2017 - Forward
  - Total shareholder returns
Our Approach Delivers Strong Results Under a Range of Conditions

- **Earnings Per Share (1)**
  - LYB
  - Peers
  - S&P 500

- **WTI Oil Price**
  - USD, per bbl

- **Ethylene Supply / Demand (2)**
  - Global Ethylene Capacity
  - Global Ethylene Demand
  - Global Ethylene Effective Operating Rate

- **Maya 2-1-1 Refining Spreads**
  - USD, per bbl

(1) Source: Factset. Peers are BASF, Celanese, CF Industries, Dow, DuPont, Eastman, Huntsman, Methanex, Sabic, Westlake. LYB is ex. LCM. Peers and S&P 500 rebased to LYB 2011 EPS ex. LCM of $4.32 per share. CAGR is the compound annual growth rate of EPS from 2011 to 2016.

(2) Source: IHS and LYB.
Delivering Leading Total Shareholder Returns

5-Year Total Shareholder Return vs. Peers (1)

TSR outperformance vs. peers underpinned by strong cash flows, robust dividends and share repurchases

(1) Total shareholder return over period from Jan 1, 2012 to Dec. 31, 2016. Source: Factset.
Reached a Point in the Road Where Options Begin To Broaden

Where We’ve Been

- Leading Scale & Market Position
- Global Reach
- Operational Excellence
- Excellent HSE Performance
- Best-in-Class TSR
- Strong Balance Sheet & Leading Cash Flows

Where We Are Going

- Rapid, High-Return Projects
- Ethylene Expansions
- Growth: Polyethylene + Propylene Oxide

Capital Allocation Considerations Today

Building for the Future
We Can Generate Value by Leveraging Skills and Strategy

1. Formation
2. Establishment
3. Development
4. Sustainable Growth

2010

Establish and Stabilize Culture and Systems
Optimize Footprint
Rapid Capture of Latent Opportunities

2016

Manage Costs
Increase Profitability
Increase Cash Flow
Create Value

Beyond

Build on Success and Skills

Capabilities
Foundation in Place to Support Growth . . .

- Industry Leading HSE Culture
- Global Standardized Manufacturing Systems
- Scale on Which to Build
- Single Instance of SAP
- Favorable Corporate Structure

LyondellBasell Foundational Strengths
Industry Leading HSE Culture

Global Standardized Manufacturing Systems

Scale on Which to Build

Single Instance of SAP

Favorable Corporate Structure

LyondellBasell Foundational Strengths

... With a Demonstrated Heritage of Integrating Businesses
Our Foundation Is in Place: Value Can Be Generated by Leveraging Our Approach

- Fits LYB Skill Set
- Large-Scale Assets
- Benefits From Our Strengths
- Meets or Exceeds Financial Criteria
- Extends Technology Reach
- Petro-chemical or Derivative
- Strengthens Geographic Presence
- Improves LYB Earnings Stability

Shareholder Value
### Strive to Build on Our Strengths and Skills

<table>
<thead>
<tr>
<th>Well Head</th>
<th>Midstream</th>
<th>Refining</th>
<th>Olefins &amp; Aromatics</th>
<th>Intermediates &amp; Polymers</th>
<th>Performance &amp; Eng. Resins</th>
<th>Electronic &amp; Specialty</th>
<th>Bio &amp; Pharma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success Characteristics</td>
<td>Exploration Development</td>
<td>Logistics Contracting</td>
<td>High Operating Rates/Reliability Lean Cost Structure Process Expertise Increasing Technical Service Support</td>
<td></td>
<td></td>
<td>Proprietary Technology Continuous Innovation</td>
<td></td>
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Building for the Future
World-Class Operator with Broad Options

- Leading scale and market position
- Best-in-class operator
- Leading cash flow generation
- Strong capital return
- Safe, strong, and sustainable dividend
- Strong balance sheet

Multiple paths to **shareholder value** with a **balanced capital allocation strategy** and **proven track record of success**
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New York Stock Exchange
April 5, 2017

Value-Driven Growth
Thomas Aebischer
Chief Financial Officer

Building for the Future
Strong Foundation on Which to Build

**Past Success**

- ✔ Strong financial foundation with upside
- ✔ Continue to be a thoughtful industry leader
  - ✔ Excellent track record delivering EBITDA and EPS
  - ✔ Peer-leading total shareholder return
  - ✔ Strong and sustainable dividend yield
  - ✔ Leading ROIC

**Future Drivers**

- ✔ Future capital allocation driven by shareholder value
  - ✔ Investing through organic growth
  - ✔ Committed to strong capital returns
  - ✔ Disciplined M&A criteria
  - ✔ Many opportunities to drive value
LYB’s Methodical Approach Established a Record of Strong Results

LYB EBITDA (ex. LCM)

2016 EBITDA (ex. LCM)

Earnings Per Share (1) (ex. LCM)

(1) Diluted earnings per share from continuing operations ex. LCM.
Industry-Leading Cash Flow Under a Broad Range of Industry Conditions

2011 – 2016 LYB Cash Flows (1)

Avg. FCF as % of EBITDA ex. LCM (2011-2016) (2)

USD, billions

<table>
<thead>
<tr>
<th>Year</th>
<th>FCF</th>
<th>CAPEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
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</tr>
<tr>
<td>2012</td>
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<tr>
<td>2013</td>
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<tr>
<td>2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Free cash flow (FCF) based on cash from operating activities less total capital expenditure (CAPEX).

(2) Source: CapitalIQ. Reflects average FCF as % of EBITDA from 2011-2016 except for peers with more recent IPOs.
Shareholders Benefitted from Peer-Leading Dividends and Share Repurchases

Dividends and Share Repurchases as % of Average Market Capitalization (1)

74% 16% 57% 24% 30% 31% 19% 23% 13% 26% 20% 17% 26% 2% 8%

Source: Company filings, Factset and Capital IQ as of March 2017.
Note: Reflects uses of capital from 2011-2016 except for peers with more recent IPOs.
(1) Reflects cumulative 2011-2016 dividends and share repurchases as a % of average market capitalizations from Dec. 2011 to Dec. 2016, except for peers with more recent IPOs.
Capital Deployment Hierarchy

Foundation

- Base CapEx: ~$1.1 bn
  - First priorities for cash

- Interest Expense: ~$0.3 bn

- Dividend: ~$1.4 bn
  - Fund through the cycle with cash flow from operations

Discretionary Opportunities

- Growth CapEx: ~$1.1 bn
  - High-return in advantaged businesses

- Special Dividends / Acquisitions / Share Repurchases: ~$2.9 bn of share repurchases
  - Discretionary cash returned to shareholders
  - M&A if value-creating and strategic
Debt Restructuring Generated Significant Value

LyondellBasell Cost of Debt

9.6%
2010 Average Interest Rate of Debt

490 bps Improvement

4.7%
2016 Average Interest Rate of Debt
We Are Committed to a Strong, Growing and Sustainable Dividend

Interim Dividends and Incremental Free Cash Flow

(1) FCF based on cash flow from operating activities less total capital expenditure.

(2) Source: FactSet as of March 17, 2017.
## More Organic Growth in Pipeline

<table>
<thead>
<tr>
<th>Completed Projects</th>
<th>Scope (MM lbs.)</th>
<th>Start-Up</th>
<th>CAPEX ($MM)</th>
<th>Potential EBITDA ($MM/year)  ’11-’16 Avg. Margins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase Ethane Capability</td>
<td>500</td>
<td>2012</td>
<td>~$25</td>
<td>$50 - $70</td>
</tr>
<tr>
<td>EU Butadiene Expansion</td>
<td>155</td>
<td>2013</td>
<td>~$100</td>
<td>$40 - $50</td>
</tr>
<tr>
<td>Methanol Restart</td>
<td>250 MM Gal.</td>
<td>2013</td>
<td>~$180</td>
<td>$190-210</td>
</tr>
<tr>
<td>Matagorda PE Debottleneck</td>
<td>220</td>
<td>2014</td>
<td>~$20</td>
<td>$10 - $20</td>
</tr>
<tr>
<td>U.S. Ethylene Expansions</td>
<td>~ 2,000</td>
<td>2012 - 2016</td>
<td>$1,825</td>
<td>$450 - $600</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>~$2,150</strong></td>
<td><strong>$740 - $950</strong></td>
</tr>
</tbody>
</table>

**Future Projects**

<table>
<thead>
<tr>
<th>Project</th>
<th>Scope</th>
<th>Start-Up</th>
<th>CAPEX ($MM)</th>
<th>Potential EBITDA ($MM/year)  2016 Avg. Margins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperzone HDPE</td>
<td>1,100</td>
<td>2019</td>
<td>~$700 - $750</td>
<td>$150 - $200</td>
</tr>
<tr>
<td>New PO/TBA Plant</td>
<td>1,000 PO</td>
<td>2021</td>
<td>~$2,000 - $2,500</td>
<td>$300 - $400</td>
</tr>
</tbody>
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(1) EBITDA is average potential EBITDA using 2011 – 2016 average margins.
Our Balance Sheet Provides Capacity for Value-Driven Growth

Sources
- Balance Sheet Capacity
- Free Cash Flow

Uses
- Inorganic Opportunities
- Share Repurchase
- Growth CAPEX
- Dividends and Interest
- Base CAPEX

Priority
- Optional
- Mandatory

Building for the Future
Debt Portfolio Characteristics
(As of 12/31/2016; Adjusted for Q1 Financing Activities)

Total and Net Debt \(^{(2,5)}\)

<table>
<thead>
<tr>
<th>USD, billions</th>
<th>Total Debt</th>
<th>Net Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10</td>
<td>$9.1 bn</td>
<td></td>
</tr>
</tbody>
</table>

Liquidity

- Over $5 bn of liquidity \(^{(1)}\)

Debt Characteristics \(^{(2)}\)

- Total Debt: $9.1 bn
- Fixed to Floating Ratio \(^{(3)}\): 74% to 26%
- Weighted Average Maturity \(^{(4)}\): 13.2 years
- Weighted Average Cost of Debt: 4.51%
- Total Funded Debt / EBITDA ex. LCM: 1.4x

Currency Composition

- 59% USD Debt
- 41% EUR Debt, including ~$2.95 bn economically swapped to EUR

(1) ~$2.4 bn of Cash, Short-Term Investments and Repurchase Agreements + ~$2.7 bn of Undrawn Credit Facilities.
(2) Debt is at par value, excludes capital leases and differs from reported figures.
(3) Fixed to floating ratio based on a net debt basis and assuming a target cash balance of $1.5 bn.
(4) Weighted average maturity as of March 15, 2017.
(5) Net Debt is total debt less cash and cash equivalents, short term investments and repurchase agreements.
M&A as a use of proceeds could temporarily enhance leverage capacity

Requires commitment to pay down portion of debt within 24 months

For Illustrative Purposes Only

Corporate Rating  Total Debt / EBITDA (Close)  Cost of Incremental 10-Year Debt

BBB+/Baa1  $9.1  $2.5  $4 - $12  ~3.0x  ~3.8%

BBB/Baa2  $9.1  $2.5  $6 - $18  ~3.5x  ~4.3%

Capacity dependent on specific investment and business outlook

For Illustrative Purposes Only

Note: Incremental debt capacity based on a range of underlying business forecasts. M&A scenarios assume incremental temporary leverage of 0.5x and factor in acquired EBITDA and synergies. Indicative cost of incremental 10-Year debt as of March 7, 2017. Agency adjustments reflect additional items S&P and Moody’s include for leverage analysis, most notably pension and lease obligations. Figure above is an approximation based on each agency’s calculation.
A Process to Consider Inorganic Opportunities Focused on Value

- Build on leading positions and technologies in core strengths
- Disciplined approach and process
- Strive to generate value, not just scale

Strategic Fit
- Strong fit with our core competencies
- Large-scale assets
- Leverages our corporate structure

Rigorous Financial Criteria
- Balance Sheet
  - Maintain investment grade
- Income Statement
  - Strengthen growth and margin profile
  - Improve earnings stability
  - Accretive to EPS within 2 years
- Return Expectations
  - IRR in excess of 12%
- Significant synergy potential
Investor Day

Value-Driven Growth

Bob Patel
Chief Executive Officer

Thomas Aebischer
Chief Financial Officer

New York Stock Exchange
April 5, 2017

Building for the Future
Rigorous Strategic and Financial Criteria

- Investment-grade credit rating
- Fits strategic objectives
- Improve earnings stability while leveraging LyondellBasell’s strengths
- Significant synergy potential
- Achieve Financial Criteria

Execution → Integration → Value Creation
Driven by Value Generation

- Our business and financial structures are built to support inorganic growth
- Prepared to act on opportunity that meets our criteria
- Remain disciplined
LyondellBasell
Investor Day

Global O&P

Bob Patel
Chief Executive Officer

New York Stock Exchange
April 5, 2017
Global O&P Overview

EBITDA (ex. LCM) History

Key Messages

- LYB O&P is a strong earnings and cash generator
- Strong global presence
- Global trends favor continued demand growth
- Favorable global operating rates
- U.S. remains feedstock advantaged

Wesseling, Germany

Channelview, Texas
We Have a Substantial Global Footprint . . .

Global LYB Capacity (1) B lbs.

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Ethylene</td>
<td>16.5</td>
</tr>
<tr>
<td>Propylene</td>
<td>9.0</td>
</tr>
<tr>
<td>Polyethylene</td>
<td>11.6</td>
</tr>
<tr>
<td>Polypropylene (PP)</td>
<td>11.8</td>
</tr>
<tr>
<td>PP Compounds</td>
<td>2.5</td>
</tr>
</tbody>
</table>

(1) LYB wholly-owned capacity and proportional share of JV capacity as of December 31, 2016.
Which Generates Strong EBITDA and Cash Flow (EBITDA ex. LCM less Base CAPEX)

- Excellent cash flow under a broad range of market conditions
- Operating focus and steady investment drive high asset reliability and cash flow

(1) Cash Flow is defined here as EBITDA ex. LCM less base capital expenditures.
Global Macro Trends
Demographics Driving Demand

Upper/Middle Class Households

Households, millions


- China
- India
- Western Europe
- U.S.

2016 Polyolefins Consumption

Consumption, lb/person

Northeast
Asia
Southeast
India
W. Europe
N. America

GDP per capita, USD thousands

0 10 20 30 40 $50

World PE and PP Demand

lbs., billions


- PE
- PP

‘90 – ‘16
PE: 4.4%
PP: 6.6%

‘11 – ‘16
PE: 3.6%
PP: 4.9%

‘15 – ‘16
PE: 3.9%
PP: 4.4%

China Polyolefin Trade Deficit

lbs, billions

2016 2021

PE
PP

0 -10 -20 -30 -40

Production less Domestic Demand

Source: IHS.

Building for the Future
Global Ethylene Operating Rates Remain Strong Despite New Capacity

2017 – 2021 global ethylene operating rates average above 2010-2016 rates

Source: IHS, LYB estimates, effective operating rate assuming 6% industry downtime. Based on 2017 updated balances.
Ethylene Cost Curve Favors U.S. Ethane in Both High and Low Oil Scenarios

Global Ethylene Cost Curve

- High cost MTO has become a significant source of supply in China
- At low crude oil prices and high operating rates, we believe MTO is a baseline supporting global PE prices

2021 Ethylene Supply by Feedstock

- Ethane
- LPG
- NAPHTHA
- CTO/MTO

2021 Production: 385 B lbs

CTO and MTO Ethylene Capacity in China

Source: IHS, LYB estimates...
Global Polyolefins Supply and Demand Forecasts Remain Favorable

- Rates in the upper 80 - 90% range reflect a tight market
- Polyethylene tracking ethylene operating rates
- Polypropylene continues to be balanced to tight

Source: IHS, LYB estimates.
O&P-Americas

Paul Augustowski
Senior Vice President

New York Stock Exchange
April 5, 2017

Building for the Future
O&P-Americas Segment Overview

EBITDA (ex. LCM) History

<table>
<thead>
<tr>
<th>Year</th>
<th>EBITDA</th>
<th>LCM</th>
<th>2011-16 Average EBITDA ex. LCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td></td>
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<td>2012</td>
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<td>2013</td>
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<td>2014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key Messages

- LYB capacity expansions complete
- Proven operational reliability and feedstock flexibility
- Major turnarounds complete in past two years; significant volume expansion in 2017

Product Capacities and Positions (1)

<table>
<thead>
<tr>
<th>Product</th>
<th>Capacity (B lbs)</th>
<th>NA ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene</td>
<td>11.7</td>
<td>2</td>
</tr>
<tr>
<td>Polyethylene</td>
<td>6.4</td>
<td>3</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>3.9</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: LYB and IHS

(1) LYB wholly-owned capacity and proportional share of JV capacity as of December 31, 2016.
North America Continues to Benefit from Shale Gas Advantage

Current crude oil to gas ratio remains significantly advantaged

North America ethylene remains advantaged vs. 60% of the world crackers

**Oil to Gas and Ethane Price Ratios**

- Crude Oil / Gas Price Ratio
- Crude Oil / Ethane Price Ratio

**Global Ethylene Cost Curve**

Source: IHS

(1) Oil to Gas ratio is Brent crude oil price (USD/bbl) divided by the Henry Hub natural gas price (USD/MMBTU). Ethane price ratio is Brent crude oil price divided by the Mont Belvieu price of ethane expressed as fuel value (USD/MMBTU).
LYB Well-Positioned to Leverage Feedstock Flexibility

Industry Feedstock Cracker Margins

2016 LYB U.S. Cracker Feedstock Flexibility as Percent of Ethylene Production

- Recently completed LYB expansions designed to maximize ethane
- Sophisticated optimization tools and assets drive feed flexibility for maximum margins
- Advancing a host of small low capital projects to further expand our feedstock optionality

Source: IHS and LYB.

Building for the Future
U.S. Ethane Supply Continues to Exceed Demand

- To mitigate supply risk, LYB has secured long term supply & pipeline contracts
- To mitigate price risk, LYB has alternative feedstock capability & has hedged a small portion of the ethane portfolio


(1) U.S. Ethane Frac Spread = Mont Belvieu ethane price less ethane value using Henry Hub natural gas price.
Trends Support Further Increases in USGC Ethane Supply

Natural Gas Demand

- Growing demand focused on U.S. Gulf Coast markets

Ethane gal/Mscf Gas Increasing

- Ethane content in natural gas steadily increasing
- Drilling concentrated in oil fields with rich associated gas

Rig Count Additions Jun ’16 – Mar’17

- Increased drilling concentrated in Texas, Oklahoma, and New Mexico
- ~60% in Permian and Eagle Ford

These trends could lead to an upside of several hundred thousand barrels per day of ethane

Source: Tudor Pickering Holt, Baker Hughes, Enterprise, Bentek, EIA, and LYB.
LYB Has Flexibility Within a Broad Ethylene Derivative Portfolio

- LYB derivatives represent ~ 15% of 2016 U.S. ethylene consumption
- LYB ethylene integration is ~ 85%
- Merchant position provides access to PVC and non-integrated acetyl and glycols producers

Source: IHS.
(1) LYB capacities as of December 31, 2016.
(2) Ethylene cash margin is IHS Ethylene NT price minus IHS ethylene weighted average feedstock cost; PE cash margin is IHS NT estimate blow molding price minus IHS ethylene contract NT minus polyethylene production cost estimate.
Polyethylene Export is Economically Favored Versus Ethane/Ethylene

- LYB established global sales and marketing channels
- Export infrastructure under construction
- Export netbacks are similar to large domestic buyers

Source: IHS, Townsend Solutions.
1) Netback is the product revenue after deducting costs of transportation and packaging.

Export vs. Domestic Netback (1)

LYB 2014-2016

Packaging Supply Demand Additions Since 2015

Export Logistics Cost

Cumulative MMlb

LYB 2014-2016

Building for the Future
Significant Value Generated by Differentiated Polyolefins Portfolio

2016 Polyolefin Volumes & End Uses

LYB Value of Differentiated Grades

- Top quartile Polyethylene business performance vs. industry
- Improved Polypropylene operations and business performance versus historical trends
- Higher market growth of differential products in automotive, packaging and consumer products

Source: LYB. Based on ACC Polyolefins data.
New *Hyperzone* HDPE investment will offer resins with:

- Combination of LYB PE and PP technical expertise
- Excellent balance of processing capability and higher stiffness
- Targeting high-growth applications
- 60% of volume representing differential value
- New foundation for global LYB technology licensing
### Developing Additional Growth Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Scope</th>
<th>Capex ($MM)</th>
<th>2016 Margins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Several Expansions and Debottlenecks</td>
<td>2 Blb Ethylene, 0.24 Blb PE</td>
<td>~ $1,900</td>
<td>$370 – 550</td>
</tr>
<tr>
<td><em>Hyperzone</em> HDPE Plant</td>
<td>1.1 Blb PE</td>
<td>~ $700 – 750</td>
<td>$150 - 200</td>
</tr>
<tr>
<td>Expansions</td>
<td>0.55 Blb Ethylene, 0.3 Blb PE, 0.35 Blb PP</td>
<td>~ $405 - 440</td>
<td>$200 - 290</td>
</tr>
<tr>
<td>New Plants</td>
<td>1.1 Blb Propylene, 1.1 Blb PP Plant, 1.1 Blb PE Plant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Potential EBITDA (1) ($MM/year)

- **COMPLETED**
- **PROGRESSING**
- **UNDER STUDY**

Source: LYB, Chemical Data and IHS.

(1) Potential EBITDA assumes 100% utilization and is based on third party consultant industry margins for 2016 as of February 6, 2017.
O&P-Americas Summary

- North American production continues to be globally favored
- Expect ethane to remain favored into the future
- LYB assets provide excellent flexibility
- Polyolefins differentiation provides incremental value
- Additional expansion options under study
O&P-Europe, Asia, International Segment Overview

EBITDA (ex. LCM) History

- **Record EBITDA in 2015 and 2016**
- **Leveraging O&P Europe restructuring in a positive market environment**
- **Delivering differential performance to peers**
- **Joint Ventures & PP Compounds provide stability**
- **Growing our leading PP Compounds position**

**Product Capacities and Positions (1)**

<table>
<thead>
<tr>
<th>Product</th>
<th>Capacity (B lbs)</th>
<th>Sites</th>
<th>EU ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene</td>
<td>4.8</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Propylene</td>
<td>3.5</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>PE</td>
<td>5.2</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>PP</td>
<td>7.9</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>PP Compounds</td>
<td>2.5</td>
<td>17</td>
<td>1 (Global)</td>
</tr>
</tbody>
</table>

**Key Messages**

Sources: IHS, AMI, LYB.

(1) LYB wholly-owned capacity and proportional share of JV capacity as of December 31, 2016.

*Building for the Future*
Drivers of Profitability: Portfolio is Well-Balanced

<table>
<thead>
<tr>
<th>2011-2016 EBITDA(1)</th>
<th>Drivers for Profitability</th>
<th>Near-Term Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▪ Increased feedstock flexibility</td>
<td>▪ Sustained focus on operational excellence, cost and capital discipline</td>
</tr>
<tr>
<td></td>
<td>▪ High operating rates</td>
<td>▪ Optimization of feedstock logistics and energy efficiency</td>
</tr>
<tr>
<td></td>
<td>▪ Restructuring and cost reduction to offset inflation</td>
<td>▪ Leverage global scale</td>
</tr>
<tr>
<td></td>
<td>▪ Systematic emphasis on high value end-use and selective innovation for high-value markets</td>
<td></td>
</tr>
</tbody>
</table>

Capturing value across the O&P EAI business portfolio

(1) EBITDA excludes amounts allocated to Other.
Structural Improvements and Strong Markets Drive Sustained Profit Improvements

Indexed O&P EAI EBITDA

- 2011-2013 restructuring a source of sustainable improvement
- Commodity businesses leveraging high global/European operating rates and foreign exchange rates
- Targeted innovation pipeline building resilience for the future

Source: LYB.

(1) O&P EAI trough, mid-cycle and peak EBITDA values are based on LYB estimates.
Sustainable Differential Performance

European Crackers Operating Rate

- Industry
- LYB

European HDPE Operating Rate

- Industry
- LYB

EBITDA per pound of Ethylene (1)

LYB continues to outperform peers

Source: LYB, Cefic, Fides. Industry and LYB Operating Rates are excluding turnarounds.

(1) LYB EBITDA excludes LCM; O&P EAI peers are Borealis and INEOS.
Optimize profitability with *feedstock agility* and continuous *cost management*

Source: 2015 PTAI PCMP.
Lack of New Capacity and Moderate Growth Should Maintain High Operating Rates

- No net capacity growth: 2013 - 2020
- Demand growth forecasted for PE and PP in Europe

Source: 2017 IHS.
Polyolefins Differentiation Provides Earnings Stability Through the Cycle

2016 LYB EAI Polyolefins Product Volumes

- Differentiated grades provide volume stability
- Differentiated grades provide premium margin over commodity
- Premium margin more significant at the bottom of the cycle
Joint Ventures and International Marketing

LYB Equity Income largely from O&P EAI

- Feedstock advantaged production in Middle East
- Local participation in Asia/ME markets
- Significant JV capacities\(^{(1)}\)
  - 5.5 B lbs. olefins
  - 9.7 B lbs. PE & PP
  - 0.3 B lbs. compounding
- Significant source of after-tax earnings and free cash flow
- Scalable, global network

Source: LYB.
\(^{(1)}\) Represents total joint venture annual nameplate capacity.
Well-positioned for Global Marketing of U.S. Exports

- 80+ Countries
- 1500+ direct customers
- 100+ staff for sales and marketing

Asia - Marketing and Sales

Differentiated

LYB Sales Offices in EAI Regions
Global PP Compounds Generate Stable Returns

EBITDA Trend

Indexed EBITDA, 2011 = 100%

- 2011
- 2012
- 2013
- 2014
- 2015
- 2016

PP Compounds

- Leading market position of up to 50% regionally
- 2.4B pounds sold in 2016 or 25 lbs for every light vehicle produced in our markets
- Organic growth with market and strengthening position through acquisitions

Next Application Opportunities

- Metallic Pigmented Hifax (Range Rover)
- Soft Touch Softell (Audi)

Source: AMI PP Compounds, August 2016.
O&P EAI
Strong Portfolio of Businesses and Assets

- Structurally improved cost basis and flexibility, leveraging 2010-2011 restructuring

- 50% of 2016 EBITDA generated from areas of differentiation with potential for further growth
  - Premium polyolefin mix
  - PP compounds, Catalloy and Polybutene
  - Cost-advantaged Joint Ventures asset base
  - Strong Joint Ventures dividends flow

- Scalable Global Marketing Network, in particular in Asia
  - Decades of direct polyolefin marketing experience in Asia
  - ~ 4.5 B lbs of annual sales from wholly-owned and JV assets
Investor Day

Intermediates & Derivatives

Jim Guilfoyle
Senior Vice President
Global Intermediates & Derivatives
Global Supply Chain

New York Stock Exchange
April 5, 2017

Building for the Future
Intermediates and Derivatives: A Platform for Earnings Stability & Growth

EBITDA (ex. LCM) History

<table>
<thead>
<tr>
<th>Year</th>
<th>EBITDA</th>
<th>LCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1,000</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>1,500</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>1,500</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>2,000</td>
<td>200</td>
</tr>
<tr>
<td>2016</td>
<td>1,500</td>
<td></td>
</tr>
</tbody>
</table>

Key Messages

- Stable earnings and consistent cash generation
- Broad product portfolio with feedstock integration
- Leading market positions and differential technologies
- Strong market outlook and platform for growth

Product Capacities and Positions

<table>
<thead>
<tr>
<th>Product</th>
<th>Capacity</th>
<th>Global Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene Oxide</td>
<td>5.1 Blbs.</td>
<td>#2</td>
</tr>
<tr>
<td>Oxyfuels</td>
<td>75 MBPD</td>
<td>#1</td>
</tr>
<tr>
<td>Styrene</td>
<td>5.9 B Lbs.</td>
<td>#1</td>
</tr>
</tbody>
</table>

(1) Capacity data represents 100% capacity share.

Botlek, The Netherlands
Fundamental Drivers for Stable Earnings

- Product and End Use Diversity
- Advanced Technology
- Contracting Strategy
- Feedstock Position and Integration
## Broad Product Portfolio Provides Resilient Demand

<table>
<thead>
<tr>
<th>Core Products</th>
<th>Propylene Oxide &amp; Derivatives</th>
<th>Oxyfuels and Related Products</th>
<th>Intermediate Chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Propylene Oxide (PO)</td>
<td>High Purity Isobutylene (HPIB)</td>
<td>Styrene Monomer (SM)</td>
</tr>
<tr>
<td></td>
<td>Propylene Glycol (PG)</td>
<td>Methyl Tertiary Butyl Ether (MTBE)</td>
<td>Methanol (MeOH)</td>
</tr>
<tr>
<td></td>
<td>Butanediol (BDO)</td>
<td>Ethyl Tertiary Butyl Ether (ETBE)</td>
<td>Glacial Acetic Acid (GAA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vinyl Acetate Monomer (VAM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ethylene Oxide (EO)</td>
</tr>
<tr>
<td>Key Raw Materials</td>
<td>Propylene</td>
<td>Butane, Bio-ethanol, Methanol</td>
<td>Ethylene, Benzene, Natural Gas</td>
</tr>
<tr>
<td>Key Applications</td>
<td>Home and auto cushioning</td>
<td>Inside liner tires</td>
<td>Food packaging</td>
</tr>
<tr>
<td></td>
<td>Insulation foams</td>
<td>Lubricant additives</td>
<td>Textiles</td>
</tr>
<tr>
<td></td>
<td>Polyester composites</td>
<td>Fuel blending components</td>
<td>Coatings</td>
</tr>
<tr>
<td></td>
<td>Coatings</td>
<td></td>
<td>Safety glass</td>
</tr>
<tr>
<td></td>
<td>Automotive parts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spandex</td>
<td></td>
<td>Surfactants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Antifreeze</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Industrial coatings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Polyester</td>
</tr>
</tbody>
</table>

*Building for the Future*
Breadth of Product Portfolio and Contracting Strategy Dampens Volatility


100% = Average I&D 2011-2016 EBITDA

Indexed to average I&D EBITDA

I&D  PO&D  Intermediates  Oxyfuels & Related
• PO  • Styrene  • MTBE  
• P-Glycol  • Methanol  • ETBE  
• Glycol Ethers  • Acetic Acid  • Isobutylene  
• Butanediol  • VAM  • TBHP  
•  • EO/EG  • TBA

Contracting Strategy (1)

Cost Plus

Market

Source: LYB.
(1) Internal LYB estimates derived from third party sales, 2016.
Technology Advantage Has Provided Stability and a Platform for Growth

Propylene Oxide & Derivatives (PO&D)

- **Propylene Oxide**
  - LYB #2 in PO
  - Top 5: 53%

- **Oxyfuels**
  - LYB #1
  - Top 5: 31%

Sources of LYB Advantage

- Access to low-cost technologies
- Market has low liquidity
- Downstream integration
- Leader in fuels advocacy
- Flexible production capability
- Global logistics network

Global Capacity Share (2016) (1)

- Market: 23 B lbs.
- Market: 810 MB/D

Differentiated Proprietary Technology (2)

(1) Capacity data from IHS, PCI, and LYB resources.
(2) Proportion of 2016 EBITDA, excluding the impact of the LCM adjustment.
Styrene and Methanol Scale is Significant and Leveraging

Styrene Supply and Demand

Methanol Supply and Demand

U.S. Styrene Industry Margin \(^{(1)}\)

U.S. Methanol Industry Margin \(^{(1)}\)

3.4 billion pounds
LYB’s wholly-owned Styrene capacity

440 million gallons
LYB’s wholly-owned Methanol capacity

Source: IHS and LYB.

\(^{(1)}\) 3-month moving average.
The Result is Consistent EBITDA and Outstanding Cash Generation

**EBITDA (ex. LCM) Range 2011 – 2016**

- **LYB**
- **Peers**

**2011 – 2016 Avg. EBITDA (ex. LCM) less Capex**

- **LYB**
- **Peers**

Cash generation and earnings larger than most public peers

Source: LYB, Capital IQ.

(1) EBITDA is as reported by Capital IQ and could include adjustments and therefore not be on the same basis. One peer did not restate financial information back to 2011 following a reorg and therefore the average for this peer was based on the average of 2012 – 2016.

Notes: Peers include Huntsman, Celanese, Eastman, and Dow Performance Materials and Chemicals.
Market Conditions are Favorable for a PO/TBA Project

- Aligns with our strategy
  - Invest where we have leading technology positions
  - Leverage leading market position
  - Stable business with strong cash flow

- U.S. Shale Advantage
  - Abundant butane
  - Favorable oil / NGL pricing

- Construction schedule aligned
  - Industry resource availability on tail of major USGC build

---

**Butane as a Percentage of Brent**

- **U.S. Shale Advantage**
  - Abundant butane
  - Favorable oil / NGL pricing

**Construction schedule aligned**

- Industry resource availability on tail of major USGC build

---

**Gulf Coast Labor Availability**

- Gulf Coast, No. of Workers
  - 2014: 60,000
  - 2015: 70,000
  - 2016: 80,000
  - 2017: 90,000
  - 2018: 100,000
  - 2019: 110,000
  - 2020: 60,000

---

**Source:**

(1) Source: IHS.
(2) Source: Industrial Information Resources and LYB.
Propylene Oxide: Favorable Growth Environment

- Operating rate stability
- PO demand growth equivalent to one new world scale plant per year
- Growth underpinned by macro trends of population growth, urbanization, and wealth expansion
- Environmental pressure on competing technologies

Source: LYB.

Global Propylene Oxide (PO) Supply/Demand

- Effective Capacity
- Demand
- % Utilization
Oxyfuels: Butane Upgraded to High Octane Gasoline

- U.S. will continue shale gas production and associated NGLs will be abundantly available
- Meets the needs of improving gasoline quality
- Environmental benefit of oxygenates blended to fuel
- Increased demand in developing countries

Global Gasoline and Oxyfuel Demand

Demand for Oxyfuels is Growing

U.S. MTBE Upgrade Value

(1) Source: IHS.
(2) Source: LYB, Platts, and IHS.
(3) Source IHS. Global Gasoline ex. NA and LA is excluding North America and Latin America.
I&D: Strong Foundation In Markets and Technology Enable Growth

- Maintain focus on strong operations generating steady cash flow
- Increase investment in core chemical technologies
- Grow organically through advantaged technologies and feedstocks
- Expand platform for value-driven growth
Investor Day

Refining, Manufacturing and Projects

Dan Coombs
Executive Vice President

New York Stock Exchange
April 5, 2017

Building for the Future
Refining

- 268,000 barrels per day capacity
- Designed for heavy, sour crude oils (Nelson Complexity = 12.5)
- Upgrading investments completed for new, stringent gasoline and diesel fuel specifications
- Houston Ship Channel location has excellent access to global heavy crude supplies and markets for products

Key Messages
- Margins supported by growing demand for cleaner fuels and greater heavy crude discounts
- Good access to advantaged feedstocks and domestic and export markets
- Recent performance impacted by reliability and turnarounds. Positive outlook post 1Q 2017.
- 2011 – 2016 refining EBITDA (ex. LCM) less capital expenditures > $1.6 billion

Characteristics
- 268,000 barrels per day capacity
- Designed for heavy, sour crude oils (Nelson Complexity = 12.5)
- Upgrading investments completed for new, stringent gasoline and diesel fuel specifications
- Houston Ship Channel location has excellent access to global heavy crude supplies and markets for products

EBITDA (ex. LCM) History

2011-2016 Avg = $440 MM
Heavy Refining Spreads Forecast to Increase

Maya 2-1-1

- Maya Discount
- Gasoline Crack Spread
- Diesel Crack Spread

Houston Refinery Throughput

- Diesel fuel demand supported by maritime fuel requirement
- 10 ppm sulfur gasoline spec increases octane demand
- Discount for heavy crudes increases at higher crude price
- Identified and correcting 2016 issues to improve reliability

Source: LYB, Platts.
Robust Global Manufacturing Footprint

Spanning the Globe

North America
- USA
- Illinois
- Iowa
- Louisiana
- New Jersey
- Ohio
- Tennessee
- Texas
- Mexico

Europe
- France
- Germany
- Italy
- Netherlands
- Poland
- Spain
- UK

Middle East
- Saudi Arabia

South America
- Brazil

Asia Pacific
- Australia
- China
- India
- Malaysia
- South Korea
- Thailand

Legend
- LyondellBasell Manufacturing
- Joint Venture Manufacturing

We manufacture at 55 sites across 17 countries.

Our Focus

- GoalZero operations
- Comprehensive benchmarking
- Cost and capital discipline
- Leveraging global footprint
Focus on Manufacturing Cost Discipline

Manufacturing Operating Costs (1)

Benchmarking (2)

Internal and external benchmarking drives focused, continual actions and improvements

- Olefins: ~ 80% of production in top half operating cost performance
- Polyolefins: > 50% of production in top half operating cost performance
- PO/SM, PO/TBA and Methanol all in top half of industry cost of production performance

(1) Adjusted for wage inflation.
2017 Potential Benefits from LYB Maintenance Investments During 2016

LYB Major Turnarounds Per Year

- 2013-2015 Avg
- 2016
- 2017
- 2018-2020 Avg

2017 vs. 2016 Available Capacity

- Ethylene: 1.8 Blb
- Ethylene Derivatives: 600 MMlb
- Refining: 40 Mbpd

~$600 million EBITDA at 2016 industry benchmark margins
Increasing Investment in LYB Growth

Capital Investment

- Capital programs moving toward profit-generating growth
- Base investment increases with
  - Larger asset base due to growth program
  - Inflation
  - Near-term HSE program spending

<table>
<thead>
<tr>
<th>Year</th>
<th>Base</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2011 Avg</td>
<td>500</td>
<td>1000</td>
</tr>
<tr>
<td>2012-2015 Avg</td>
<td>1100</td>
<td>1400</td>
</tr>
<tr>
<td>2016-2020 Avg</td>
<td>1600</td>
<td>1800</td>
</tr>
</tbody>
</table>

USD, millions

Building for the Future
## LYB Projects Have Added Value

<table>
<thead>
<tr>
<th>Project</th>
<th>Schedule (1)</th>
<th>Cost (1)</th>
<th>Benefit / Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Butadiene Expansion</td>
<td>✓</td>
<td>✓</td>
<td>Paid for itself in ~3 years</td>
</tr>
<tr>
<td>Channelview Methanol Restart</td>
<td>✓</td>
<td>✓</td>
<td>Paid for itself in ~2 years</td>
</tr>
<tr>
<td>Matagorda Polyethylene Expansion</td>
<td>✓</td>
<td>✓</td>
<td>Paid for itself in ~1 year</td>
</tr>
<tr>
<td>La Porte Ethylene Expansion</td>
<td>✓</td>
<td>✓</td>
<td>Running above design output</td>
</tr>
<tr>
<td>Channelview Ethylene Expansion</td>
<td>✓</td>
<td>✓</td>
<td>Matching design output</td>
</tr>
<tr>
<td>Corpus Christi Ethylene Expansion</td>
<td>✓</td>
<td>✓</td>
<td>Full capacity available mid-2017</td>
</tr>
<tr>
<td>Tier III Gasoline</td>
<td>✓</td>
<td>✓</td>
<td>On schedule, on budget</td>
</tr>
</tbody>
</table>

(1) Schedule target is +/- 3 months and cost target is +/- 20%.

---

*Building for the Future*
Gulf Coast Project Pressures Continue but Easing with Time

- Initial wave of industry projects suffered from higher cost and lower productivity due to lack of skilled workers and engineers – impact expected to decrease over time

- Majority of LYB PO/TBA and Hyperzone construction windows occur outside of peak USGC labor demand period

Source: LYB.
Update on Major Projects

La Porte Hyperzone Polyethylene

- 1.1 billion pounds per year
- Groundbreaking – May 2017
- Startup 2019
- Est. cost: ~$700 - 750 million

PO/TBA

- 1 billion pounds Propylene Oxide, 29 MBPD Oxyfuels
- Final Investment Decision – 3Q 2017
- Est. cost: ~$2.0 – $2.5 billion
Summary

- Refinery positioned to return to strong cash generation

- Global manufacturing focus
  - Health, Safety and Environmental excellence
  - Reliability
  - Feedstock efficiency
  - Cost discipline

- Investment in assets maintains industry-leading reliability

- Investment in profit-generating growth projects increasing from ~25% in 2011 to ~50% of all CAPEX through 2020
Concluding Remarks

Bob Patel
Chief Executive Officer
Guided by a Clear and Value-Oriented Strategy

- Achieve Top Quartile Operations
- Practice Relentless Cost Discipline
- Prudent Financial Stewardship
- Pursue Profitable Organic Growth
- Capture Opportunities In Cycles

Value Creation

PEOPLE

Run What We Have Really Well

Maintain Financial Discipline, Steady Organic Growth

Find Opportunities in Cycles

Building for the Future
### Enterprise Value / 2017 Consensus EBITDA

<table>
<thead>
<tr>
<th></th>
<th>Peer Maximum</th>
<th>Mean</th>
<th>Peer Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LYONDELLBASELL</strong></td>
<td>6.4x</td>
<td>8.3x</td>
<td>5.8x</td>
</tr>
<tr>
<td><strong>Peer Maximum</strong></td>
<td>12.2x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Premier Operations in Attractive Markets

- **Global Company With Leading Scale and Market Positions**
- **Unmatched Cost Discipline and Efficiency**
- **Sizable and Sustainable Cash Flows and Leading Capital Returns**
- **Strong Organic Growth Program**
- **Geographically Positioned to Capture Feedstock Advantage**
- **Resilience Through Downcycle With Upside Potential**

Actions Taken Elevate Earnings Even at 2010/2011 Industry Conditions

### 2010/2011 Industry Conditions and Metrics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brent Crude</td>
<td>$96/bbl</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>$4.32/MMBTU</td>
</tr>
<tr>
<td>Ethane (68¢/gallon ($10/MMBTU))</td>
<td>62¢/gallon</td>
</tr>
<tr>
<td>Oil / Gas ratio</td>
<td>22</td>
</tr>
<tr>
<td>Oil / Ethane ratio</td>
<td>9</td>
</tr>
</tbody>
</table>

- Global Ethylene Operating Rate: 91%
- NWE MTBE Raw Material Margin: $20/bbl
- Maya 2-1-1:
  - 2010/2011 Average LYB Share Count: $570 MM
- 2016 Year-end Average LYB Share Count: $404 MM

### Key LYB Changes Since 2010/11

**Operating Assumptions**
- Additional ethylene capacity
- Additional methanol capacity
- Additional BD capacity
- O&P EAI restructuring / optimization

**Financial Changes**
- Lower interest expense
- Higher depreciation expense
- Lower share count

(1) LYB Estimates. Operating and financial changes tax affected using the U.S. statutory rate.
Our Strategy Increases the Upside Potential

LYB Potential EBITDA (ex. LCM)

LYB Potential Net Income (ex. LCM)

2014/2015 Industry Conditions and Metrics

- **Brent Crude**: $76/bbl
- **Natural Gas**: $3.63/MMBTU
- **Ethane**: 23¢/gallon ($3/MMBTU)
- **Oil / Gas ratio**: 21
- **Oil / Ethane ratio**: 22

Global Ethylene Operating Rate: 94%
NWE MTBE Raw Material Margin: 90¢/gallon
Maya 2-1-1: $23/bbl
2014/2015 Average LYB Share Count: 494 MM

Key LYB Assumptions Since 2014/15

- **Operating Assumptions**
  - Corpus ethylene expansion
  - Hyperzone polyethylene plant
  - PO/TBA plant
  - PP at 2016 Performance

- **Financial Changes**
  - Lower share count
  - Higher depreciation expense

(1) LYB Estimates. Operating and financial changes tax affected using the U.S. statutory rate.
Matching Capital Allocation with the Maturity of the Company

Financial and Operational Optimization

Strong Dividend

Organic Growth

Share Repurchase

Driving Growth

Where We’ve Been

Where We Are Going

Building for the Future
We Are Well-Positioned for Value-Driven Growth

Strong Foundation
- Global reach
- Leading technology
- World-class operator
- Balance sheet capacity

Strong Earnings Upside at a Low Valuation
- Portfolio breadth with differentiated products
- Feedstock advantage and flexibility
- Strong and secure dividend

Talented People and Robust Processes
- Ownership culture
- Incentives aligned with shareholders
- Disciplined capital deployment processes
Investor Day

Appendix

New York Stock Exchange
April 5, 2017

Building for the Future
Information Related to Financial Measures

This presentation makes reference to certain “non-GAAP” financial measures as defined in Regulation G of the U.S. Securities Exchange Act of 1934, as amended. The non-GAAP measures we have presented include diluted earnings per share from continuing operations excluding LCM, EBITDA and EBITDA excluding LCM, EBITDA excluding LCM less capital expenditures and EBITDA excluding LCM less base capital expenditures which we also refer to as cash flows, and EBITDA excluding LCM per pound of ethylene capacity. LCM stands for “lower of cost or market,” which is an accounting rule consistent with GAAP related to the valuation of inventory. Our inventories are stated at the lower of cost or market. Cost is determined using the last-in, first-out (“LIFO”) inventory valuation methodology, which means that the most recently incurred costs are charged to cost of sales and inventories are valued at the earliest acquisition costs. Market is determined based on an assessment of the current estimated replacement cost and selling price of the inventory. In periods where the market price of our inventory declines substantially, cost values of inventory may be higher than the market value, which results in us writing down the value of inventory to market value in accordance with the LCM rule, consistent with GAAP. This adjustment is related to our use of LIFO accounting and the decline in pricing for many of our raw material and finished goods inventories. We report our financial results in accordance with U.S. generally accepted accounting principles, but believe that certain non-GAAP financial measures, such as EBITDA and earnings and EBITDA excluding LCM, provide useful supplemental information to investors regarding the underlying business trends and performance of the company’s ongoing operations and are useful for period-over-period comparisons of such operations. Non-GAAP financial measures should be considered as a supplement to, and not as a substitute for, or superior to, the financial measures prepared in accordance with GAAP.

EBITDA, as presented herein, may not be comparable to a similarly titled measure reported by other companies due to differences in the way the measure is calculated. We calculate EBITDA as income from continuing operations plus interest expense (net), provision for (benefit from) income taxes, and depreciation & amortization. EBITDA should not be considered an alternative to profit or operating profit for any period as an indicator of our performance, or as an alternative to operating cash flows as a measure of our liquidity. We have also presented financial information herein exclusive of adjustments for LCM.

While we also believe that free cash flow (FCF) and the ratio of average free cash flow to EBITDA excluding LCM are measures commonly used by investors, free cash flow, as presented herein, may not be comparable to similarly titled measures reported by other companies due to differences in the way the measures are calculated. For purposes of this presentation, free cash flow means net cash provided by operating activities minus capital expenditures. The ratio of average free cash flow to EBITDA is calculated by dividing the average free cash flow for the period by EBITDA excluding LCM for the same period.
An analysis of capital expenditures is included to show investors the portion of LYB capital investment which is base versus profit generating. Total capital expenditures is the sum of base capital expenditures and profit generating expenditures.

Additionally, EBITDA per pound of ethylene capacity, EBITDA excluding LCM less base capital expenditures, the ratio of total debt to EBITDA excluding LCM, and the ratio of net debt to EBITDA excluding LCM are measures which provide an indicator of value to investors. For purposes of this presentation, EBITDA per pound of ethylene capacity means annual segment EBITDA divided by end of year segment ethylene capacity in pounds. EBITDA excluding LCM less base capital expenditures means EBITDA excluding LCM less base capital expenditures. Net debt is total debt less cash and cash equivalents, short term investments and repurchase agreements. The ratio of net debt to EBITDA excluding LCM means net debt divided by EBITDA excluding LCM.

Reconciliations for our non-GAAP measures can be found on our website at www.lyb.com/investorrelations
Reconciliation of EBITDA Excluding LCM Adjustments to EBITDA

For the Years Ended December 31,

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>EBITDA Excluding LCM Adjustments:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olefins &amp; Polyolefins - Americas</td>
<td>$2,137</td>
<td>$2,968</td>
<td>$3,573</td>
<td>$4,190</td>
<td>$3,821</td>
<td>$2,906</td>
<td>$3,266</td>
</tr>
<tr>
<td>Olefins &amp; Polyolefins - EAI</td>
<td>865</td>
<td>548</td>
<td>839</td>
<td>1,410</td>
<td>1,855</td>
<td>2,067</td>
<td>1,264</td>
</tr>
<tr>
<td>Intermediates &amp; Derivatives</td>
<td>1,410</td>
<td>1,621</td>
<td>1,492</td>
<td>1,552</td>
<td>1,656</td>
<td>1,333</td>
<td>1,511</td>
</tr>
<tr>
<td>Refining</td>
<td>977</td>
<td>481</td>
<td>182</td>
<td>409</td>
<td>519</td>
<td>72</td>
<td>440</td>
</tr>
<tr>
<td>Technology</td>
<td>191</td>
<td>197</td>
<td>232</td>
<td>232</td>
<td>243</td>
<td>262</td>
<td>226</td>
</tr>
<tr>
<td>Other</td>
<td>(111)</td>
<td>(7)</td>
<td>(7)</td>
<td>17</td>
<td>(13)</td>
<td>(9)</td>
<td>(22)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5,469</td>
<td>5,808</td>
<td>6,311</td>
<td>7,810</td>
<td>8,081</td>
<td>6,631</td>
<td>6,685</td>
</tr>
</tbody>
</table>

Less:

<table>
<thead>
<tr>
<th>LCM Adjustments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olefins &amp; Polyolefins - Americas</td>
</tr>
<tr>
<td>Olefins &amp; Polyolefins - EAI</td>
</tr>
<tr>
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</tr>
<tr>
<td>Technology</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

**EBITDA:**

| Olefins & Polyolefins - Americas | 2,137 | 2,968 | 3,573 | 3,911 | 3,661 | 2,877 | $3,188 |
| Olefins & Polyolefins - EAI | 865 | 548 | 839 | 1,366 | 1,825 | 2,067 | 1,252 |
| Intermediates & Derivatives | 1,410 | 1,621 | 1,492 | 1,459 | 1,475 | 1,333 | 1,465 |
| Refining | 977 | 481 | 182 | 65 | 342 | 72 | 353 |
| Technology | 191 | 197 | 232 | 232 | 243 | 262 | 226 |
| Other | (111) | (7) | (7) | 17 | (13) | (9) | (22) |
| **Total** | $5,469 | $5,808 | $6,311 | $7,050 | $7,533 | $6,602 | $6,462 |
## Reconciliation of Net Income To EBITDA

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income</td>
<td>$ 2,140</td>
<td>$ 2,834</td>
<td>$ 3,853</td>
<td>$ 4,168</td>
<td>$ 4,474</td>
<td>$ 3,837</td>
</tr>
<tr>
<td>(Income) Loss from Discontinued Operations</td>
<td>332</td>
<td>24</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>LCM Adjustments, After Tax</td>
<td></td>
<td></td>
<td>483</td>
<td>351</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Income from Continuing Operations Excluding LCM Adjustments</td>
<td>2,472</td>
<td>2,858</td>
<td>3,860</td>
<td>4,655</td>
<td>4,830</td>
<td>3,865</td>
</tr>
<tr>
<td>Less:</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>LCM Adjustments, After Tax</td>
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<td>(483)</td>
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<td>(18)</td>
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</tr>
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<td>Income from Continuing Operations</td>
<td>2,472</td>
<td>2,858</td>
<td>3,860</td>
<td>4,172</td>
<td>4,479</td>
<td>3,847</td>
</tr>
<tr>
<td>Provision for Income Taxes</td>
<td>1,059</td>
<td>1,327</td>
<td>1,136</td>
<td>1,540</td>
<td>1,730</td>
<td>1,386</td>
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<tr>
<td>Depreciation and Amortization</td>
<td>931</td>
<td>983</td>
<td>1,021</td>
<td>1,019</td>
<td>1,047</td>
<td>1,064</td>
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<tr>
<td>Interest expense, net</td>
<td>1,007</td>
<td>640</td>
<td>294</td>
<td>319</td>
<td>277</td>
<td>305</td>
</tr>
<tr>
<td>LCM Adjustments, Pre Tax</td>
<td></td>
<td></td>
<td>760</td>
<td>548</td>
<td></td>
<td>29</td>
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<tr>
<td>EBITDA Excluding LCM Adjustments</td>
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<td>$ 6,311</td>
<td>$ 7,050</td>
<td>$ 7,533</td>
<td>$ 6,602</td>
</tr>
</tbody>
</table>
EBITDA Excluding LCM Less Capital Expenditures

<table>
<thead>
<tr>
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<td>6,311</td>
<td>7,810</td>
<td>8,081</td>
<td>6,631</td>
<td>6,685</td>
</tr>
</tbody>
</table>

Less:

**Capital Expenditures:**

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<thead>
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<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th><strong>Total</strong></th>
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<tr>
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<td>468</td>
<td>645</td>
<td>912</td>
<td>668</td>
<td>1,376</td>
<td>$749</td>
</tr>
<tr>
<td>Olefins &amp; Polyolefins - EAI</td>
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<td>254</td>
<td>229</td>
<td>191</td>
<td>186</td>
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<td>226</td>
</tr>
<tr>
<td>Intermediates &amp; Derivatives</td>
<td>101</td>
<td>159</td>
<td>443</td>
<td>241</td>
<td>441</td>
<td>333</td>
<td>286</td>
</tr>
<tr>
<td>Refining</td>
<td>224</td>
<td>136</td>
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<td>123</td>
<td>108</td>
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<td>26</td>
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<tr>
<td>Other</td>
<td>39</td>
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<td>5</td>
<td>7</td>
<td>13</td>
<td>13</td>
<td>13</td>
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<tr>
<td><strong>Total</strong></td>
<td>1,050</td>
<td>1,060</td>
<td>1,561</td>
<td>1,499</td>
<td>1,440</td>
<td>2,243</td>
<td>1,476</td>
</tr>
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</table>

**EBITDA Excluding LCM Less Capital Expenditures:**

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th><strong>Total</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Olefins &amp; Polyolefins - Americas</td>
<td>1,712</td>
<td>2,500</td>
<td>2,928</td>
<td>3,278</td>
<td>3,153</td>
<td>1,530</td>
<td>$2,517</td>
</tr>
<tr>
<td>Olefins &amp; Polyolefins - EAI</td>
<td>630</td>
<td>294</td>
<td>610</td>
<td>1,219</td>
<td>1,669</td>
<td>1,806</td>
<td>1,038</td>
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<tr>
<td>Intermediates &amp; Derivatives</td>
<td>1,309</td>
<td>1,462</td>
<td>1,049</td>
<td>1,311</td>
<td>1,215</td>
<td>1,000</td>
<td>1,224</td>
</tr>
<tr>
<td>Refining</td>
<td>753</td>
<td>345</td>
<td>(27)</td>
<td>286</td>
<td>411</td>
<td>(152)</td>
<td>269</td>
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<tr>
<td>Technology</td>
<td>165</td>
<td>154</td>
<td>202</td>
<td>207</td>
<td>219</td>
<td>226</td>
<td>196</td>
</tr>
<tr>
<td>Other</td>
<td>(150)</td>
<td>(7)</td>
<td>(12)</td>
<td>10</td>
<td>(26)</td>
<td>(22)</td>
<td>(35)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$4,419</td>
<td>$4,748</td>
<td>$4,750</td>
<td>$6,311</td>
<td>$6,641</td>
<td>$4,388</td>
<td>$5,210</td>
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</table>
EBITDA Excluding LCM Less Base Capital Expenditures

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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EBITDA Excluding LCM Adjustments</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Olefins &amp; Polyolefins - EAI</td>
<td>548</td>
<td>839</td>
<td>1,410</td>
<td>1,855</td>
<td>2,067</td>
<td>1,344</td>
</tr>
<tr>
<td>Intermediates &amp; Derivatives</td>
<td>1,621</td>
<td>1,492</td>
<td>1,552</td>
<td>1,656</td>
<td>1,333</td>
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<td>17</td>
<td>(13)</td>
<td>(9)</td>
<td>(4)</td>
</tr>
<tr>
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<td>5,808</td>
<td>6,311</td>
<td>7,810</td>
<td>8,081</td>
<td>6,631</td>
<td>6,928</td>
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</table>

Less:

| Base Capital Expenditures: |      |      |      |      |      | |
|----------------------------|------|------|------|------|------| |
| Olefins & Polyolefins - Americas | 241 | 249 | 336 | 230 | 448 | 301 |
| Olefins & Polyolefins - EAI | 184 | 150 | 113 | 153 | 227 | 165 |
| Intermediates & Derivatives | 120 | 213 | 136 | 322 | 213 | 201 |
| Refining | 130 | 185 | 91 | 84 | 164 | 131 |
| Technology | 24 | 23 | 24 | 20 | 16 | 21 |
| Other | - | 5 | 6 | 6 | 13 | 6 |
| Total | 699 | 825 | 706 | 815 | 1,081 | 825 |

EBITDA Excluding LCM Less Base Capital Expenditures:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Olefins &amp; Polyolefins - Americas</td>
<td>2,727</td>
<td>3,324</td>
<td>3,854</td>
<td>3,591</td>
<td>2,458</td>
<td>$3,191</td>
</tr>
<tr>
<td>Olefins &amp; Polyolefins - EAI</td>
<td>364</td>
<td>689</td>
<td>1,297</td>
<td>1,702</td>
<td>1,840</td>
<td>1,178</td>
</tr>
<tr>
<td>Intermediates &amp; Derivatives</td>
<td>1,501</td>
<td>1,279</td>
<td>1,416</td>
<td>1,334</td>
<td>1,120</td>
<td>1,330</td>
</tr>
<tr>
<td>Refining</td>
<td>351</td>
<td>(3)</td>
<td>318</td>
<td>435</td>
<td>(92)</td>
<td>202</td>
</tr>
<tr>
<td>Technology</td>
<td>173</td>
<td>209</td>
<td>208</td>
<td>223</td>
<td>246</td>
<td>212</td>
</tr>
<tr>
<td>Other</td>
<td>(7)</td>
<td>(12)</td>
<td>11</td>
<td>(19)</td>
<td>(22)</td>
<td>(10)</td>
</tr>
<tr>
<td>Total</td>
<td>$5,109</td>
<td>$5,486</td>
<td>$7,104</td>
<td>$7,266</td>
<td>$5,550</td>
<td>$6,103</td>
</tr>
</tbody>
</table>
Reconciliation of Base Capital Expenditures to Capital Expenditures

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base Capital Expenditures:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olefins &amp; Polyolefins - Americas</td>
<td>241</td>
<td>249</td>
<td>336</td>
<td>230</td>
<td>448</td>
<td>301</td>
</tr>
<tr>
<td>Olefins &amp; Polyolefins - EAI</td>
<td>184</td>
<td>150</td>
<td>113</td>
<td>153</td>
<td>227</td>
<td>165</td>
</tr>
<tr>
<td>Intermediates &amp; Derivatives</td>
<td>120</td>
<td>213</td>
<td>136</td>
<td>322</td>
<td>213</td>
<td>201</td>
</tr>
<tr>
<td>Refining</td>
<td>130</td>
<td>185</td>
<td>91</td>
<td>84</td>
<td>164</td>
<td>131</td>
</tr>
<tr>
<td>Technology</td>
<td>24</td>
<td>23</td>
<td>24</td>
<td>20</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>699</td>
<td>825</td>
<td>706</td>
<td>815</td>
<td>1,081</td>
<td>825</td>
</tr>
</tbody>
</table>

| **Profit Generating Capital Expenditures:** | | | | | | |
| Olefins & Polyolefins - Americas | 227 | 396 | 576 | 438 | 928 | 513 |
| Olefins & Polyolefins - EAI | 70 | 79 | 78 | 33 | 34 | 59 |
| Intermediates & Derivatives | 39 | 230 | 105 | 119 | 120 | 123 |
| Refining | 6 | 24 | 32 | 24 | 60 | 29 |
| Technology | 19 | 7 | 1 | 4 | 20 | 10 |
| Other | - | - | 1 | 7 | - | 2 |
| **Total** | 361 | 736 | 793 | 625 | 1,162 | 735 |

| **Capital Expenditures:** | | | | | | |
| Olefins & Polyolefins - Americas | 468 | 645 | 912 | 668 | 1,376 | 814 |
| Olefins & Polyolefins - EAI | 254 | 229 | 191 | 186 | 261 | 224 |
| Intermediates & Derivatives | 159 | 443 | 241 | 441 | 333 | 323 |
| Refining | 136 | 209 | 123 | 108 | 224 | 160 |
| Technology | 43 | 30 | 25 | 24 | 36 | 32 |
| Other | - | 5 | 7 | 13 | 13 | 8 |
| **Total** | $ 1,060 | $ 1,561 | $ 1,499 | $ 1,440 | $ 2,243 | $ 1,561 |
## Reconciliation of Diluted EPS from Continuing Operations Excluding LCM Adjustments to Diluted EPS from Continuing Operations

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diluted Earnings Per Share from Continuing Operations Excluding LCM Adjustment</td>
<td>$4.32</td>
<td>$4.96</td>
<td>$6.76</td>
<td>$8.92</td>
<td>$10.35</td>
<td>$9.20</td>
</tr>
<tr>
<td>Less: LCM Adjustments</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.92</td>
<td>0.75</td>
<td>0.05</td>
</tr>
<tr>
<td>Diluted Earnings Per Share from Continuing Operations</td>
<td>$4.32</td>
<td>$4.96</td>
<td>$6.76</td>
<td>$8.00</td>
<td>$9.60</td>
<td>$9.15</td>
</tr>
</tbody>
</table>
Free Cash Flow to Net Cash Provided by Operating Activities

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Cash Flow</td>
<td>$1,810</td>
<td>$3,727</td>
<td>$3,274</td>
<td>$4,549</td>
<td>$4,402</td>
<td>$3,363</td>
<td>$3,521</td>
</tr>
<tr>
<td>Add:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>1,050</td>
<td>1,060</td>
<td>1,561</td>
<td>1,499</td>
<td>1,440</td>
<td>2,243</td>
<td>$1,476</td>
</tr>
<tr>
<td>Net Cash Provided by Operating Activities</td>
<td>$2,860</td>
<td>$4,787</td>
<td>$4,835</td>
<td>$6,048</td>
<td>$5,842</td>
<td>$5,606</td>
<td>$4,996</td>
</tr>
</tbody>
</table>

For the Years Ended December 31,
## Reconciliation of O&P-EAI EBITDA Excluding LCM per Average Pound of Ethylene Capacity

<table>
<thead>
<tr>
<th>In Million of Dollars Unless Otherwise Indicated</th>
<th>For the Years Ended December 31,</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBITDA Excluding LCM</td>
<td>865</td>
</tr>
<tr>
<td>Average Annual Ethylene Capacity (Millions of Pounds)</td>
<td>4,829</td>
</tr>
<tr>
<td>EBITDA Excluding LCM per Average Pound of Ethylene Capacity</td>
<td>17.9¢</td>
</tr>
</tbody>
</table>
### Calculation of Ratio of LYB Enterprise Value (EV) to 2017 EBITDA Consensus

**In Million of Dollars except for common shares outstanding**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Shares Outstanding, December 31, 2016</td>
<td>404,046,331</td>
</tr>
<tr>
<td>Multiplied by:</td>
<td></td>
</tr>
<tr>
<td>Closing Share Price, December 31, 2016</td>
<td>$85.78</td>
</tr>
<tr>
<td>Market Capitalization</td>
<td>$34,659</td>
</tr>
<tr>
<td>Add:</td>
<td></td>
</tr>
<tr>
<td>Current Maturities of Long-Term Debt</td>
<td>2</td>
</tr>
<tr>
<td>Short-Term Debt</td>
<td>594</td>
</tr>
<tr>
<td>Long-Term Debt</td>
<td>8,385</td>
</tr>
<tr>
<td>Less:</td>
<td></td>
</tr>
<tr>
<td>Cash</td>
<td>875</td>
</tr>
<tr>
<td>Short-Term Investments</td>
<td>1,147</td>
</tr>
<tr>
<td>Net Debt</td>
<td>6,959</td>
</tr>
<tr>
<td>Non-Controlling Interests</td>
<td>25</td>
</tr>
<tr>
<td>Enterprise Value</td>
<td>41,643</td>
</tr>
<tr>
<td>Divided by:</td>
<td></td>
</tr>
<tr>
<td>2017 EBITDA Consensus</td>
<td>6,524</td>
</tr>
</tbody>
</table>

**Ratio of Enterprise Value to 2017 EBITDA Consensus**

6.4 x
## Calculation of Ratio of Average Free Cash Flow (2011-2016) to EBITDA Excluding LCM

**In Million of Dollars**

<table>
<thead>
<tr>
<th>Year</th>
<th>Free Cash Flow</th>
<th>EBITDA Excluding LCM</th>
<th>Average FCF (2011-2016)</th>
<th>Average EBITDA Excluding LCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$1,810</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>$3,727</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>$3,274</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>$4,549</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>$4,402</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>$3,363</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>3,521</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$5,469</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>$5,808</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>$6,311</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>$7,810</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>$8,081</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>$6,631</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>6,685</strong></td>
<td></td>
</tr>
</tbody>
</table>

Ratio of Average Free Cash Flow to Average EBITDA Excluding LCM = **53%**
## Ratio of Cumulative Dividends and Share Repurchases (2011-2016) to Average Market Capitalization

### Table: Ratio of Cumulative Dividends and Share Repurchases (2011-2016) to Average Market Capitalization

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interim Dividends</strong></td>
<td>$313</td>
<td>$833</td>
<td>$1,127</td>
<td>$1,403</td>
<td>$1,410</td>
<td>$1,395</td>
<td>$6,481</td>
</tr>
<tr>
<td><strong>Special Dividends</strong></td>
<td>2,580</td>
<td>1,582</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4,162</td>
</tr>
<tr>
<td><strong>Repurchases of Ordinary Shares</strong></td>
<td>-</td>
<td>-</td>
<td>1,949</td>
<td>5,788</td>
<td>4,656</td>
<td>2,938</td>
<td>15,331</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$2,893</td>
<td>$2,415</td>
<td>$3,076</td>
<td>$7,191</td>
<td>$6,066</td>
<td>$4,333</td>
<td>$25,974</td>
</tr>
</tbody>
</table>

| Common Shares Outstanding                    | 573,390,514 | 575,216,709 | 548,824,138 | 486,969,402 | 440,150,069 | 404,046,331 | 504,766,194 |
| Multiplied by:                               |            |            |            |            |            |            |            |
| **Average Closing Share Price**              | $35.89    | $45.27    | $67.84    | $93.66    | $91.47    | $81.00    | $69.19    |
| **Average Market Capitalization**            | $20,579   | $26,040   | $37,232   | $45,610   | $40,261   | $32,728   | $34,924   |

**Ratio of Cumulative Dividends and Share Repurchases to Average Market Capitalization** | 74%
### Ratio of Pro Forma Total Debt to EBITDA Excluding LCM

<table>
<thead>
<tr>
<th><strong>In Million of Dollars</strong></th>
<th><strong>Pro Forma March 2017</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Long-Term Debt, Including Current Maturities</td>
<td>$8,387</td>
</tr>
<tr>
<td>Short-Term Debt</td>
<td>594</td>
</tr>
<tr>
<td>Total Debt, December 31, 2016</td>
<td>8,981</td>
</tr>
<tr>
<td>Less:</td>
<td></td>
</tr>
<tr>
<td>Capital leases</td>
<td>96</td>
</tr>
<tr>
<td>Add:</td>
<td></td>
</tr>
<tr>
<td>Unamortized Discount</td>
<td>59</td>
</tr>
<tr>
<td>Unamortized Debt Issuance Costs</td>
<td>59</td>
</tr>
<tr>
<td>Fair Value Adjustments</td>
<td>87</td>
</tr>
<tr>
<td>Total Pro Forma Debt</td>
<td>9,090</td>
</tr>
<tr>
<td>EBITDA</td>
<td>6,602</td>
</tr>
<tr>
<td>Add:</td>
<td></td>
</tr>
<tr>
<td>LCM Adjustment</td>
<td>29</td>
</tr>
<tr>
<td>EBITDA Excluding LCM</td>
<td>$6,631</td>
</tr>
<tr>
<td>Ratio of Pro Forma Debt to EBITDA Excluding LCM</td>
<td>1.4x</td>
</tr>
</tbody>
</table>

(1) Total pro forma debt excludes capital leases, including precious metal leases, fair value adjustments and unamortized amortization of bonds and debt issuance costs and includes impact of the March 2017 issuance of $1,000 million of 3.5% Guaranteed Notes due 2027 and repayment of the aggregate principal amount of $1,000 million outstanding of our 5% Senior Notes due 2019.
## Ratio of Net Debt to EBITDA and EBITDA Excluding LCM

### Reconciliation of Ratio of Net Debt to EBITDA and EBITDA Excluding LCM

<table>
<thead>
<tr>
<th>In Million of Dollars</th>
<th>Pro Forma March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Long-term debt, including current maturities</td>
<td>$ 8,387</td>
</tr>
<tr>
<td>Short-term debt</td>
<td>594</td>
</tr>
<tr>
<td>Total debt, December 31, 2016</td>
<td>8,981</td>
</tr>
<tr>
<td>Less:</td>
<td></td>
</tr>
<tr>
<td>Capital leases</td>
<td>96</td>
</tr>
<tr>
<td>Add:</td>
<td></td>
</tr>
<tr>
<td>Unamortized discount</td>
<td>59</td>
</tr>
<tr>
<td>Unamortized debt issuance costs</td>
<td>59</td>
</tr>
<tr>
<td>Fair value adjustments</td>
<td>87</td>
</tr>
<tr>
<td>Total pro forma debt</td>
<td>9,090</td>
</tr>
<tr>
<td>Less:</td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>875</td>
</tr>
<tr>
<td>Short-term investments</td>
<td>1,147</td>
</tr>
<tr>
<td>Repurchase agreements</td>
<td>369</td>
</tr>
<tr>
<td></td>
<td>2,391</td>
</tr>
<tr>
<td>Pro Forma Net Debt</td>
<td>$ 6,699</td>
</tr>
</tbody>
</table>