

# INVESTOR DAY 2019

September 24, 2019



**lyondellbasell**  
*Advancing Possible*

# CAUTIONARY STATEMENT

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 cyclicity of the chemical, polymers and refining industries; the availability, cost and price volatility of raw materials and utilities, particularly the cost of crude 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; any proposed business combination, the expected timetable for completing any proposed transactions and the receipt of any required governmental approvals, future financial and operating results, benefits and synergies of any proposed transactions, future opportunities for the combined company; 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, 2018, which can be found at [www.LyondellBasell.com](http://www.LyondellBasell.com) on the Investor Relations page and on the Securities and Exchange Commission's website at [www.sec.gov](http://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.

Explanations and reconciliations for our non-GAAP measures can be found in the Appendix to this presentation.

# AGENDA

<b>7:30 - 8:30</b>	Welcome Leading + Advantaged + Disciplined Q&A	David Kinney Bob Patel Bob Patel, Thomas Aebischer
<b>8:30 - 8:45</b>	Break	
<b>8:45 - 10:15</b>	Break-out Sessions <i>Integrated Polymers</i> <i>Technology Enabled Products</i> <i>Intermediates &amp; Fuels</i>	Ken Lane, Richard Roudeix Jim Guilfoyle, Jim Seward Dan Coombs, Torkel Rhenman
<b>10:15 - 10:30</b>	Break	
<b>10:30 - 11:30</b>	Delivering Value Concluding Remarks Q&A	Thomas Aebischer Bob Patel Management Team



# LUNCH AND PLANT TOUR

JOIN US FOR LUNCH AND PLANT TOUR - CHANNELVIEW, TX

## LUNCH

Channelview Administration Building

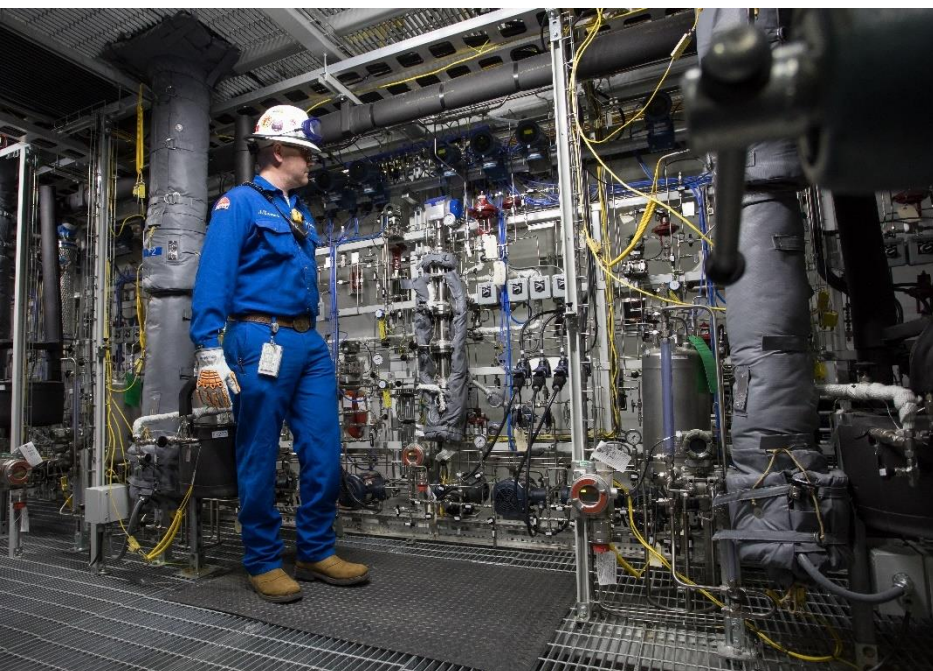
## PLANT TOUR

Channelview Control Room

Channelview Plant

PO/TBA Plant Construction Site

Houston Technology Center



# TODAY'S SPEAKERS

EXPERIENCED INDUSTRY LEADERS



**Bob Patel**  
Chief Executive Officer



**Thomas Aebischer**  
EVP  
Chief Financial Officer



**Dan Coombs**  
EVP  
Global Manufacturing,  
Refining and Projects



**Jim Guilfoyle**  
EVP  
Advanced Polymer  
Solutions



**Ken Lane**  
EVP  
Global Olefins &  
Polyolefins



**Torkel Rhenman**  
EVP  
Intermediates &  
Derivatives



**Richard Roudeix**  
SVP  
Olefins & Polyolefins



**Jim Seward**  
SVP  
R&D, Technology and  
Sustainability

# INVESTOR DAY 2019



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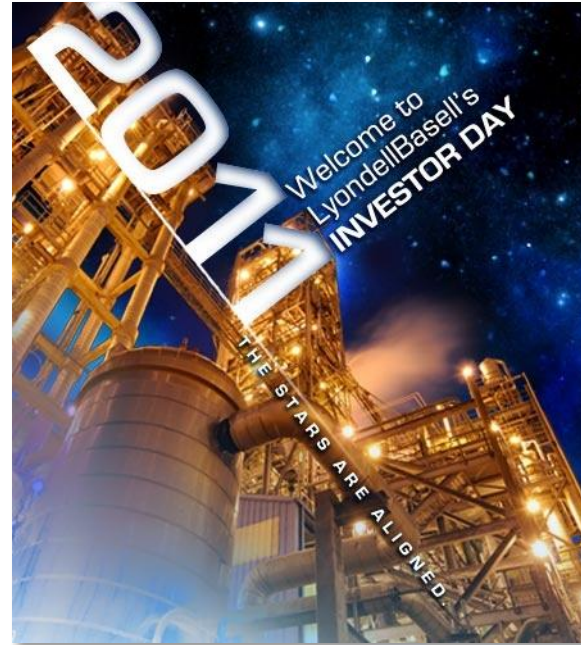
# BUILDING, INVESTING AND GROWING

OUR FOUNDATIONS AND PROVEN CAPABILITIES FOR VALUE CREATION



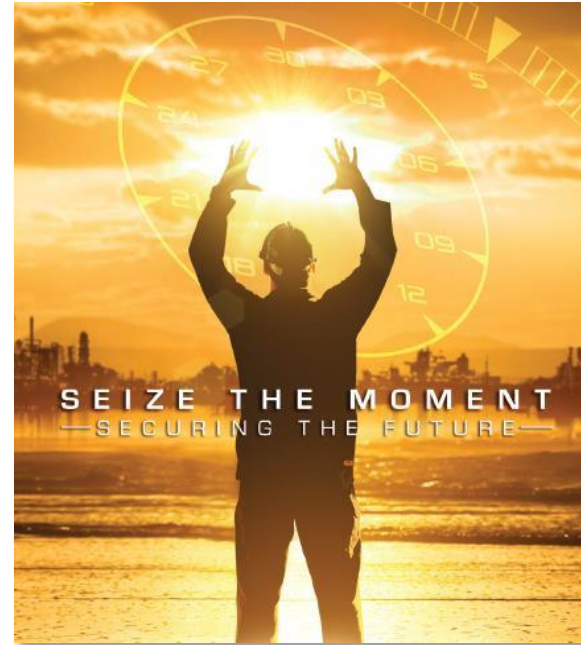
**THE NEW  
LYONDELLBASELL**

2010



**THE STARS  
ARE ALIGNED**

2011



**SEIZE THE  
MOMENT**

2013



**RIGHT PIECES  
IN THE  
RIGHT PLACES**

2015



**VALUE-DRIVEN  
GROWTH**

2017



**LEADING +  
ADVANTAGED +  
DISCIPLINED**

2019

# DELIVERING ON OUR STRATEGY

CONSISTENT EXECUTION GENERATING VALUE FROM OUR 2017 COMMITMENTS

OUR  
COMMITMENTS

ACHIEVE  
TOP-QUARTILE  
OPERATIONS

PRACTICE  
RELENTLESS COST  
DISCIPLINE

PRUDENT  
FINANCIAL  
STEWARDSHIP

PURSUE  
PROFITABLE  
ORGANIC GROWTH

CAPTURE  
OPPORTUNITIES

**Top-quartile**  
Safety Performance

**2.7%**  
SG&A / Revenue  
2016-2018 Average

**\$5.4 B**  
Cash from Operating Activities  
2016-2018 Average

**Hyperzone PE**  
2019

Acquired A. Schulman  
**\$200 MM**  
Synergies  
Doubling EBITDA

RESULTS  
DELIVERED

**High**  
Utilization Rates

**3x**  
Dividend Coverage Ratio  
LTM 2Q19

**PO/TBA**  
2021

**BBB+/Baa1**  
Credit Rating



# PERFORMANCE SNAPSHOT

DIVERSIFIED PORTFOLIO AND GLOBAL SCALE DRIVING RESILIENT RESULTS

**\$3.6 B**

NET INCOME  
LTM 2Q19

**\$6.0 B**

EBITDA  
LTM 2Q19

**11%**

FREE OPERATING  
CASH FLOW YIELD  
LTM 2Q19

**30%**

ROIC  
2015-2018 Average

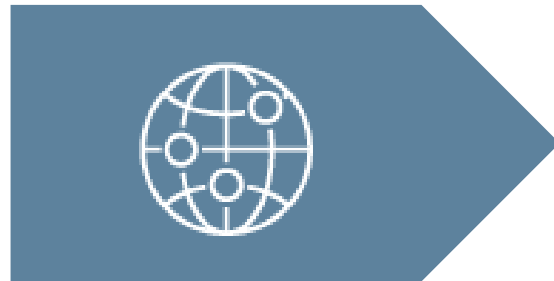
## REPORTING SEGMENTS

EBITDA LTM 2Q19

Olefins & Polyolefins – Americas	\$2,486 MM
Olefins & Polyolefins – Europe, Asia, International	\$1,016 MM
Intermediates & Derivatives	\$1,721 MM
Advanced Polymer Solutions	\$424 MM
Refining	-\$81 MM
Technology	\$349 MM

# COMPELLING INVESTMENT THESIS

LEADING + ADVANTAGED + DISCIPLINED



**LEADING** global portfolio of proven, flexible and focused businesses in large and growing markets

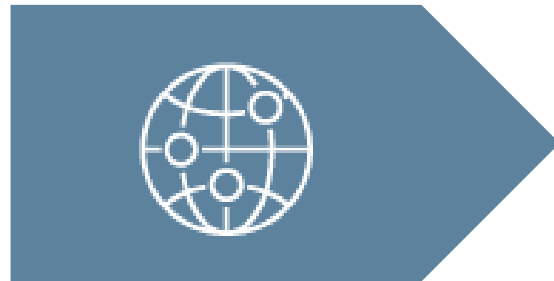


**ADVANTAGED** global position as the industry's best operator with expertise and innovation



**DISCIPLINED** capital allocation that supports value-driven growth

# LEADING + ADVANTAGED + DISCIPLINED



**LEADING** global portfolio of proven, flexible and focused businesses in large and growing markets



**ADVANTAGED** global position as the industry's best operator with expertise and innovation



**DISCIPLINED** capital allocation that supports value-driven growth

# LEADING AND FOCUSED PORTFOLIO

GROUPING OUR BUSINESS PORTFOLIO TO UNDERSCORE VALUE

## INTEGRATED POLYMERS



**EBITDA: \$3.5 B**

Olefins  
Polyethylene  
Polypropylene

### PEERS

Dow, Westlake

## TECHNOLOGY ENABLED PRODUCTS



**EBITDA: \$1.4 B**

Technology  
Advanced Polymer Solutions  
Propylene Oxide & Derivatives

### PEERS

Celanese, Eastman, Grace, PolyOne

## INTERMEDIATES & FUELS



**EBITDA: \$1.0 B**

Intermediate Chemicals  
Oxyfuels & Related Products  
Refining

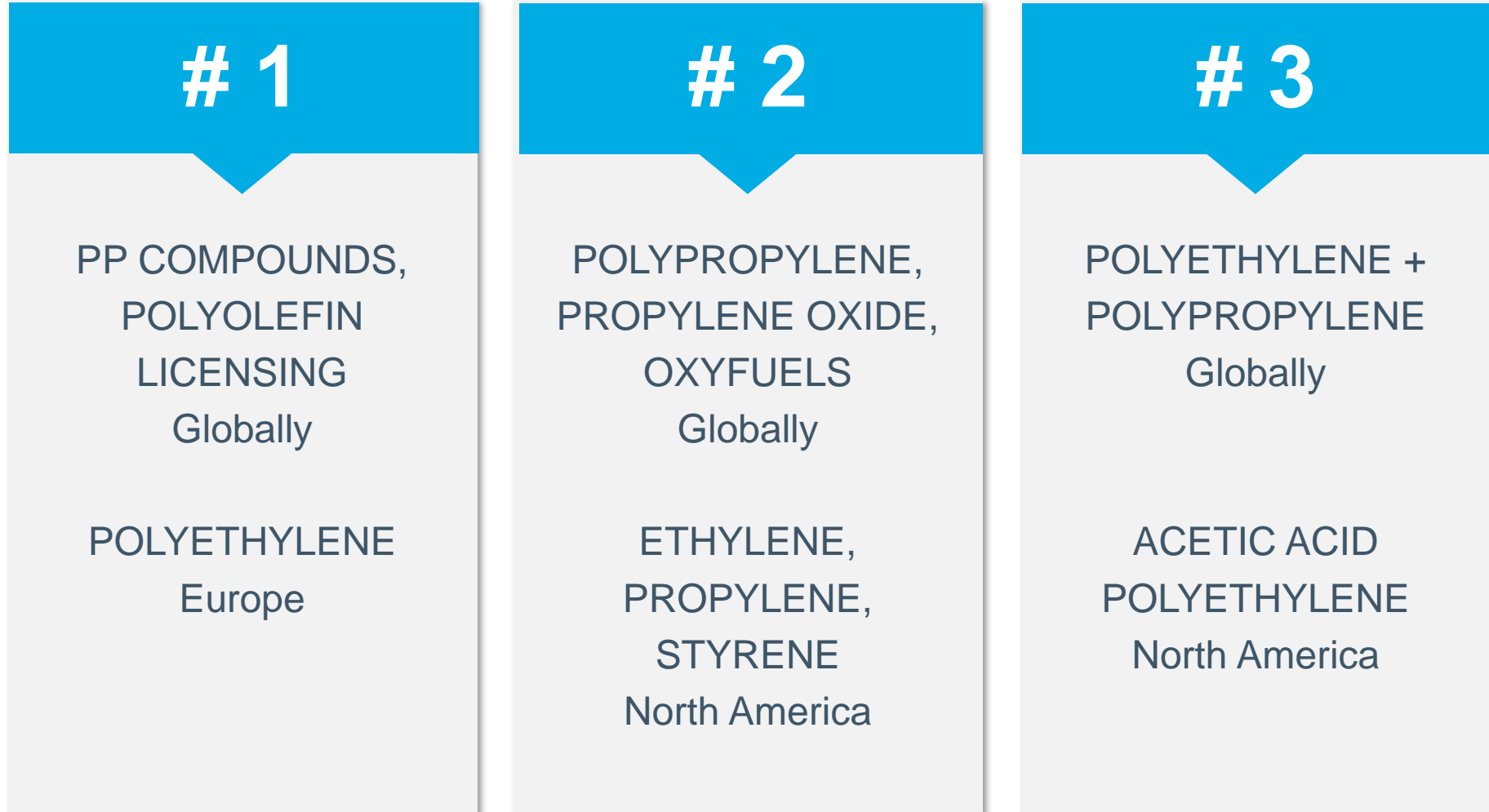
### PEERS

Celanese, Methanex, Trinseo, Valero

# A GLOBAL LEADER

TOP POSITIONS IN THE HEART OF A LARGE AND ATTRACTIVE MARKET

**\$4 Trillion**  
2018  
CHEMICAL INDUSTRY  
GLOBAL REVENUES



**\$37 B**  
REVENUE  
LTM 2Q19

**19,500**  
EMPLOYEES  
2018

MANUFACTURING SITES  
& JOINT VENTURES IN

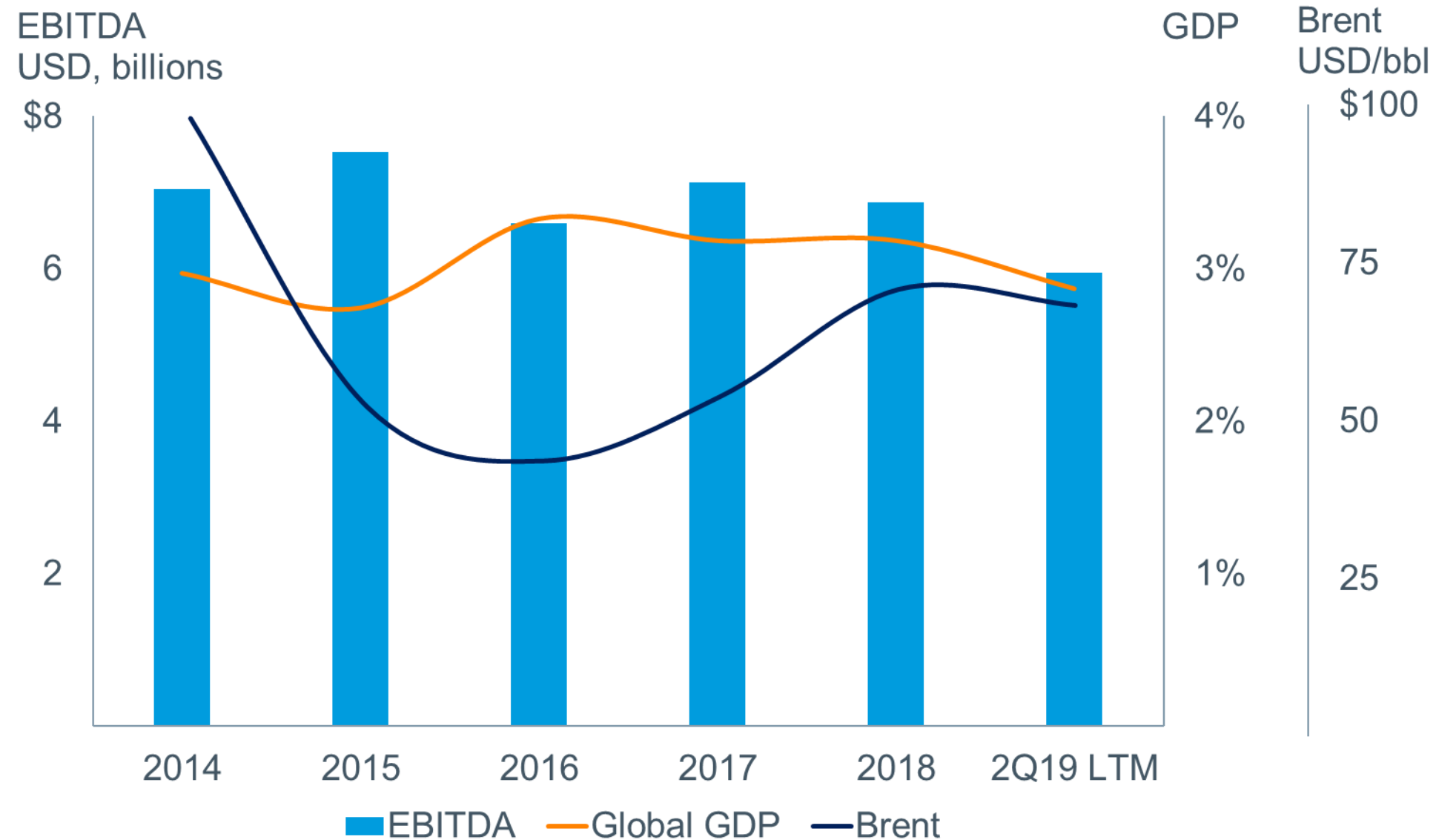
**24**  
COUNTRIES

SALES IN  
**>100**  
COUNTRIES

Source: LyondellBasell and industry consultants. Product rankings are as of December 31, 2018.

# RESILIENT PORTFOLIO

NATURAL HEDGES AND CYCLICAL OFFSETS DELIVER EARNINGS STABILITY



## NATURAL HEDGES AND CYCLICAL OFFSETS

- Offsetting feedstocks in North America and Europe reduces impacts from oil price volatility
- High consumer-driven demand exposure reduces recession downside
- Strong operational reliability captured 2018 I&D upside
- Refining poised to deliver IMO 2020 benefits

# MACRO TRENDS DRIVE OPPORTUNITY

ADVANCING SOLUTIONS THAT SUPPORT GLOBAL DEMAND

**\$3.7 Trillion**

GLOBAL INFRASTRUCTURE  
INVESTMENT

Annually, 2019-2030

**800 MM**

GLOBAL POPULATION  
GROWTH

by 2030

INCREASE IN GLOBAL FOOD  
PRODUCTION FROM

**\$7 Trillion**

in 2019 to

**\$10 Trillion**

by 2030



FOOD SAFETY &  
ACCESS



CLEAN WATER



CLEANER AIR &  
FUEL EFFICIENCY

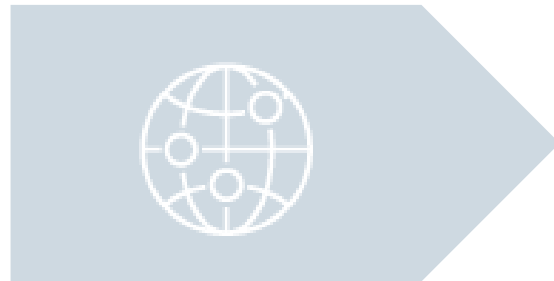


QUALITY  
HEALTHCARE

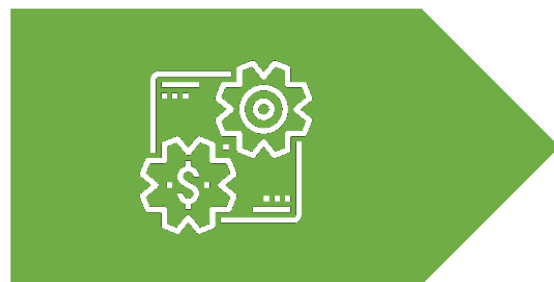


AGRICULTURAL  
EFFICIENCY

# LEADING + **ADVANTAGED** + DISCIPLINED



**LEADING** global portfolio of proven, flexible and focused businesses in large and growing markets



**ADVANTAGED** global position as the industry's best operator with expertise and innovation



**DISCIPLINED** capital allocation that supports value-driven growth



# ADVANTAGED POSITION AS THE INDUSTRY'S BEST OPERATOR

CULTURE DRIVEN BY RELENTLESS BENCHMARKING AND CONTINUOUS IMPROVEMENT



**SAFETY  
LEADERSHIP**



**OPERATIONAL  
EXCELLENCE**



**FEEDSTOCK  
FLEXIBILITY**



**COMMERCIAL  
EXCELLENCE**



**EXPERTISE AND  
INNOVATION**

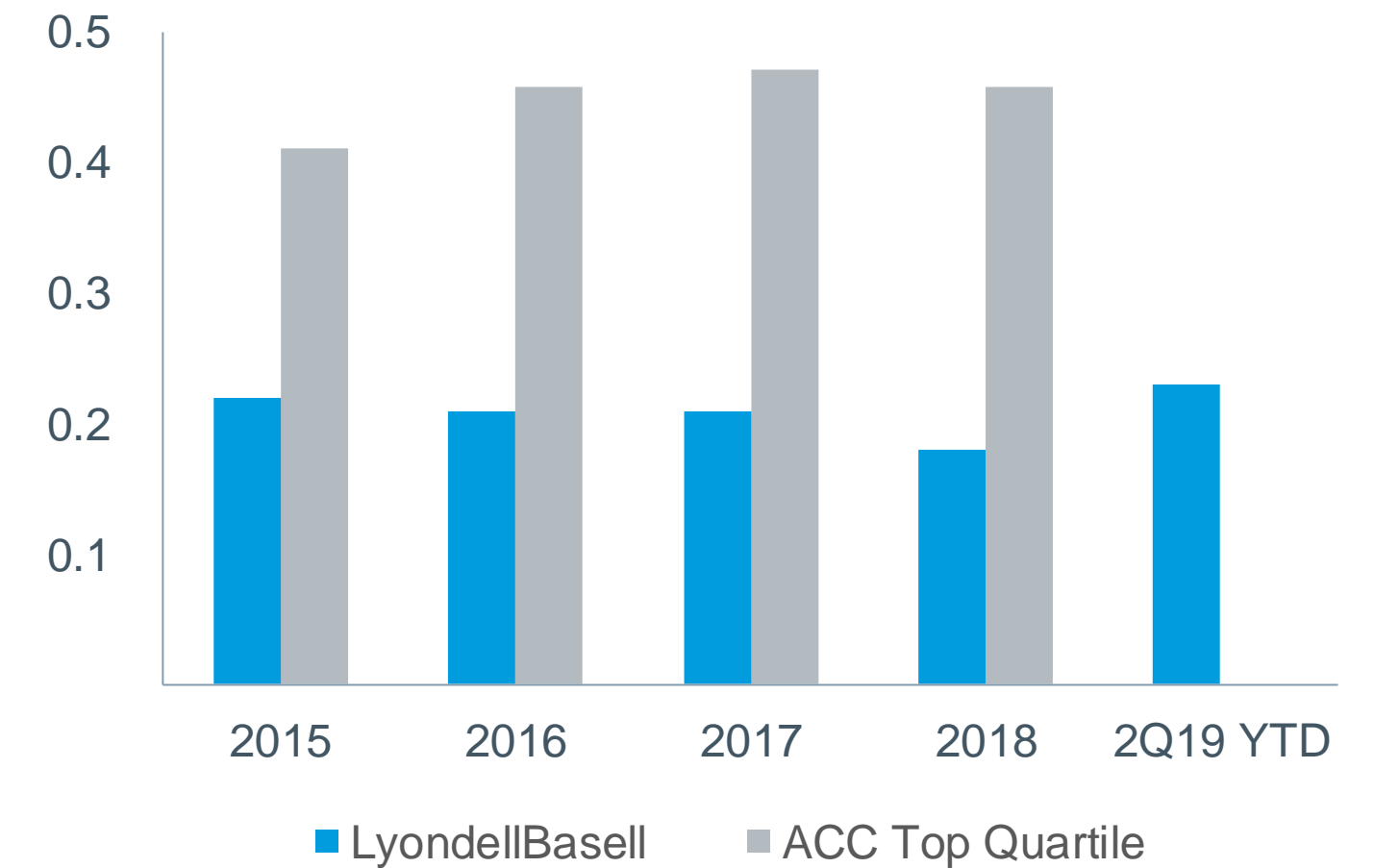




# SAFETY LEADERSHIP

CONSISTENT FOCUS DELIVERS RESULTS

Injuries per 200,000 hours worked



# DEMONSTRATED OPERATIONAL EXCELLENCE

BEST OPERATOR IN THE INDUSTRY WITH HIGH ASSET UTILIZATION AND LOW COSTS

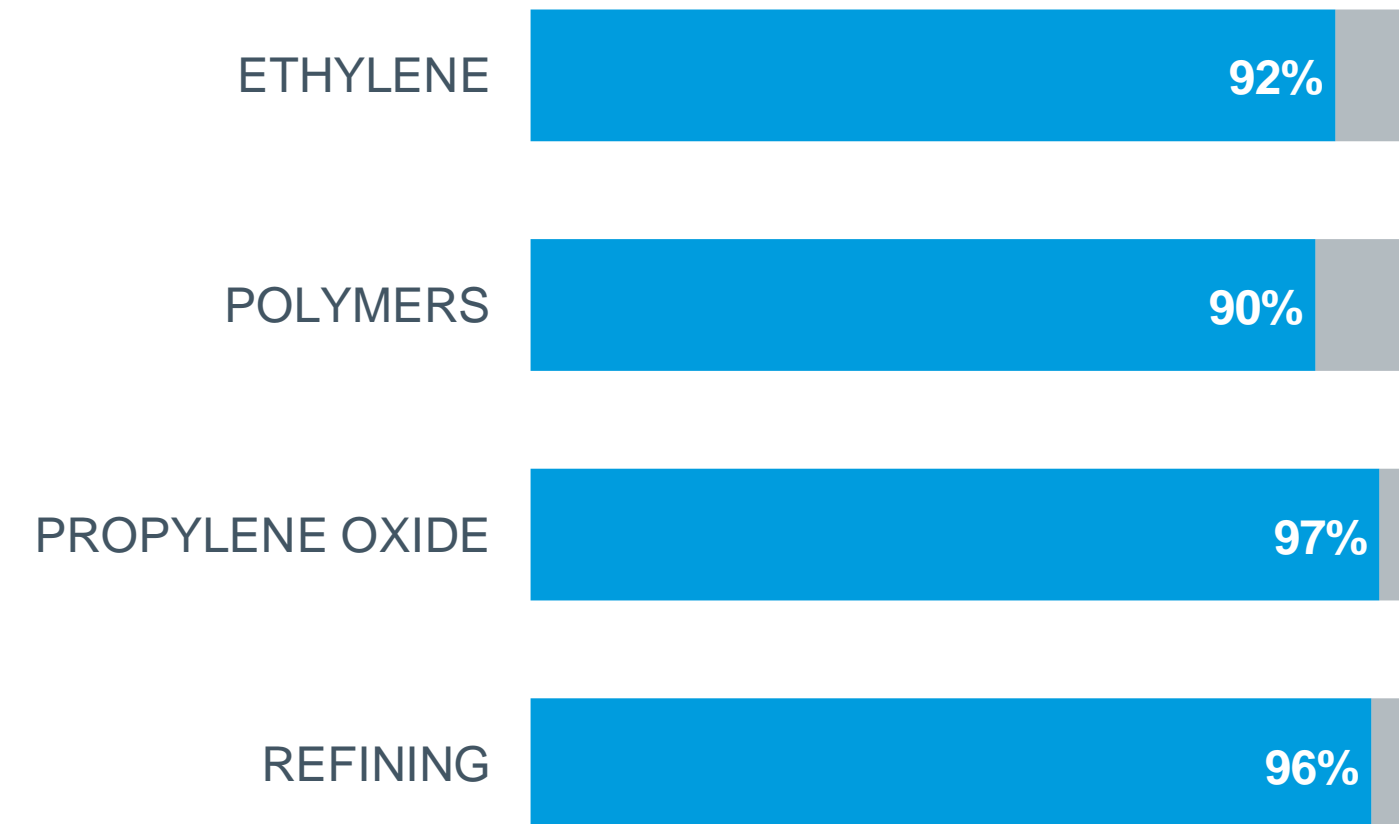
## HIGH ASSET UTILIZATION

- Consistent maintenance through the cycle
- Optimized turnaround planning
- Increased predictive maintenance
- Continuous process optimization

## SUSTAINED COST DISCIPLINE

- 2.7% SG&A / Revenue

## 2018 OPERATING RATES



# SUPERIOR FEEDSTOCK FLEXIBILITY

ROBUST FEEDSTOCK OPTIMIZATION ENHANCES PROFITABILITY

## GLOBAL CRACKER NETWORK

Full-range assets that utilize ethane, propane, butane, y-grade, naphtha, and other advantaged feeds

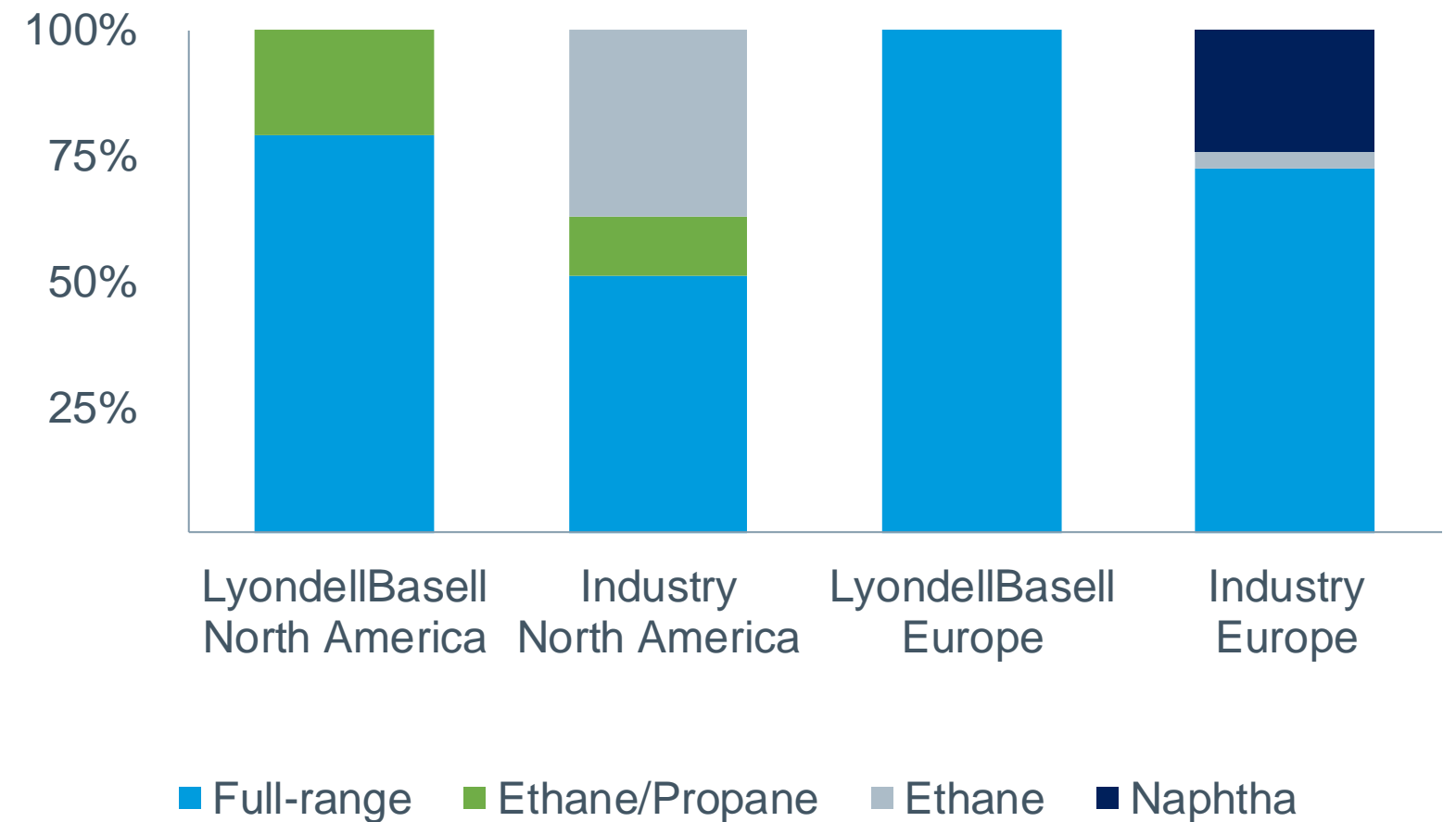
## NORTH AMERICA

Maximizing value through advantaged feeds in both the U.S. Gulf Coast and Midwest markets

## EUROPE

Capability to run ~ 50 % advantaged non-naphtha feedstocks such as propane, butane, condensates, refinery gas and hydrowax

Ethylene Production



# PROVEN COMMERCIAL EXCELLENCE

SHARING DIFFERENTIAL VALUE WITH BUSINESS PARTNERS FOR MUTUAL SUCCESS



**Jim Teague, CEO**  
**ENTERPRISE PRODUCTS**

## Focus

“The thing I love about LyondellBasell is that they know who they are ... and they are going to be the best commodity chemical company around.”



**Brad Beauchamp, President**  
**CARPENTER COMPANY**

## Relationships

“...really appreciate the commercial side...they take an active interest in our business . . . they want us to succeed.”



**Jean-Marc Boursier, COO**  
**SUEZ**

## Innovation

“Innovation is absolutely key for both LyondellBasell and SUEZ . . . we are thinking already about developing new technology, new solutions.”



**Alejandro de la Barreda, CEO**  
**GRUPO KUO**

## Commitment

“LyondellBasell is a professional and reliable company that honors its commitments...”

# EXPERTISE AND INNOVATION

OUR PRODUCTS AND TECHNOLOGIES HAVE DRIVEN GROWTH IN THE PETROCHEMICAL INDUSTRY FOR 65+ YEARS



Zeigler and Natta breakthroughs in **PE** and **PP**

1953-1954



Introduced **Hostalen** HDPE process

1955



Commercialized our proprietary **PO/TBA** process

1969



Launched our proprietary **PO/SM** process

1973



Introduced **Spheripol**, the most widely-used polyolefins process

1982



Developed **Catalloy** process technology for advanced resins

1990



Introduced **Spherizone** PP process technology

2002



Partnered with SUEZ to create **Quality Circular Polymers (QCP)**

2018



Start-up of first world-scale **Hyperzone** HDPE plant

2019

# ADVANCING SUSTAINABILITY

SERVING CUSTOMER NEEDS AND ADDRESSING SOCIETAL DEMANDS



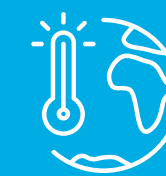
## SUSTAINABLE AND CIRCULAR PRODUCTS

Advancing sustainable technologies to create profitable business opportunities



## PLASTIC WASTE IN THE ENVIRONMENT

Developing and deploying meaningful solutions through our leadership in the Alliance to End Plastic Waste

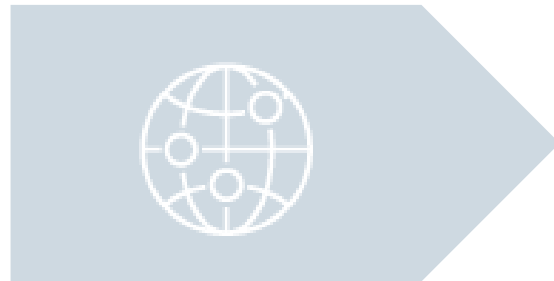


## CLIMATE CHANGE

Achieve a 15% reduction in CO<sub>2</sub> equivalent emissions per ton of product by 2030



# LEADING + ADVANTAGED + DISCIPLINED



**LEADING** global portfolio of proven, flexible and focused businesses in large and growing markets



**ADVANTAGED** global position as the industry's best operator with expertise and innovation

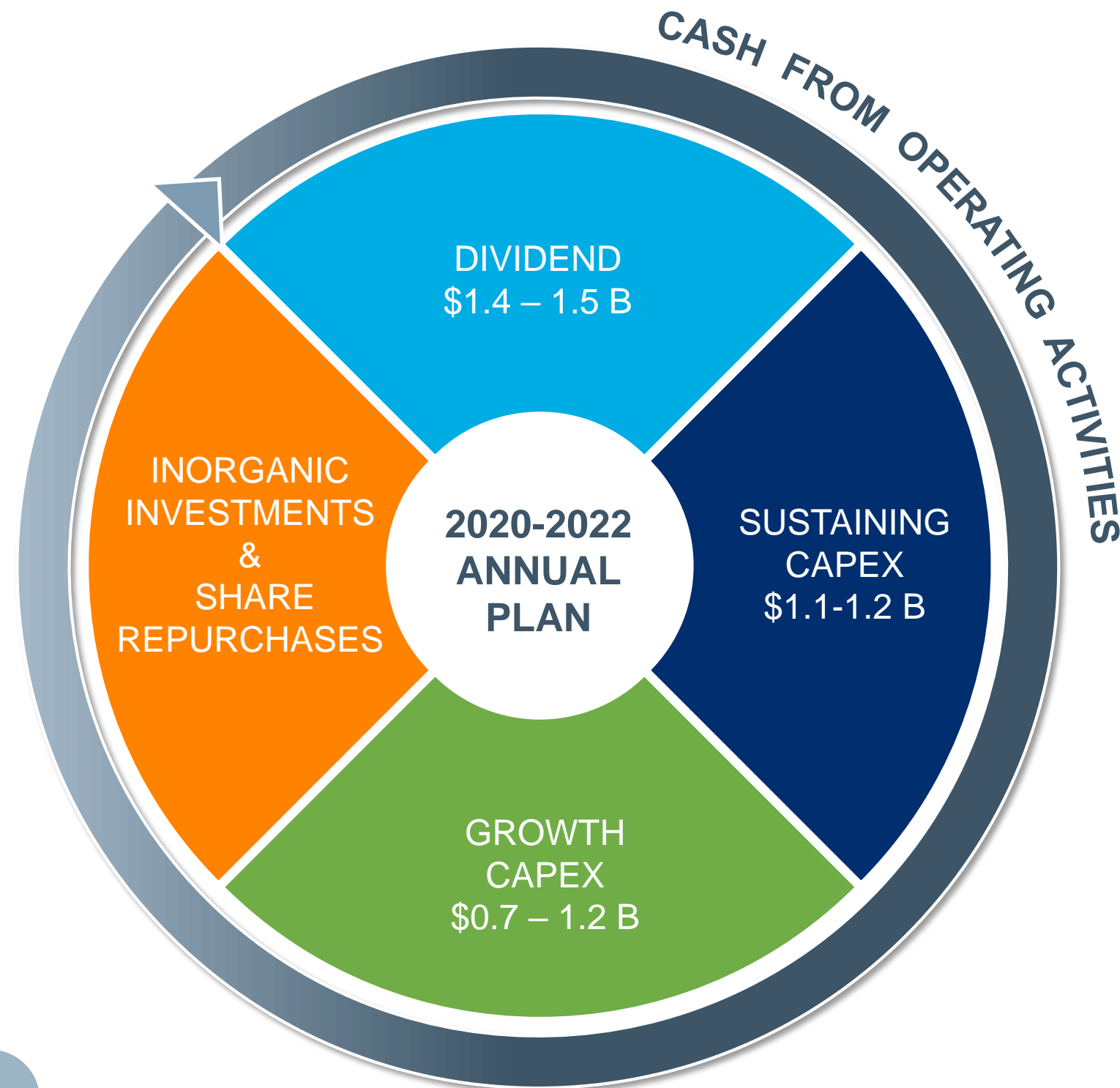


**DISCIPLINED** capital allocation that supports value-driven growth



# DISCIPLINED CAPITAL ALLOCATION

CLEAR FRAMEWORK THAT SUPPORTS VALUE CREATION AND SHAREHOLDER REMUNERATION



- 1 DIVIDEND**  
Committed to a strong and progressive dividend
- 2 SUSTAINING & GROWTH CAPEX**  
Capital investments to sustain and expand our assets
- 3 INORGANIC INVESTMENTS & SHARE REPURCHASES**  
Value-minded inorganic growth  
Return surplus cash through share repurchases

Committed to Strong Investment Grade Rating

# PIPELINE OF ORGANIC GROWTH

FOCUS ON TARGETED MID-SIZED AND HIGH-RETURN INVESTMENTS



## RECENT EXPANSIONS

2013-2019

U.S. Ethylene 1,000 KT

Polyethylene 210 KT

Polypropylene 120 KT

PP Compounds 120 KT



## CURRENT PROJECTS

2019-2021

*Hyperzone* PE 500 KT

PO/TBA 470/1,000 KT



## FUTURE INVESTMENTS

2024+

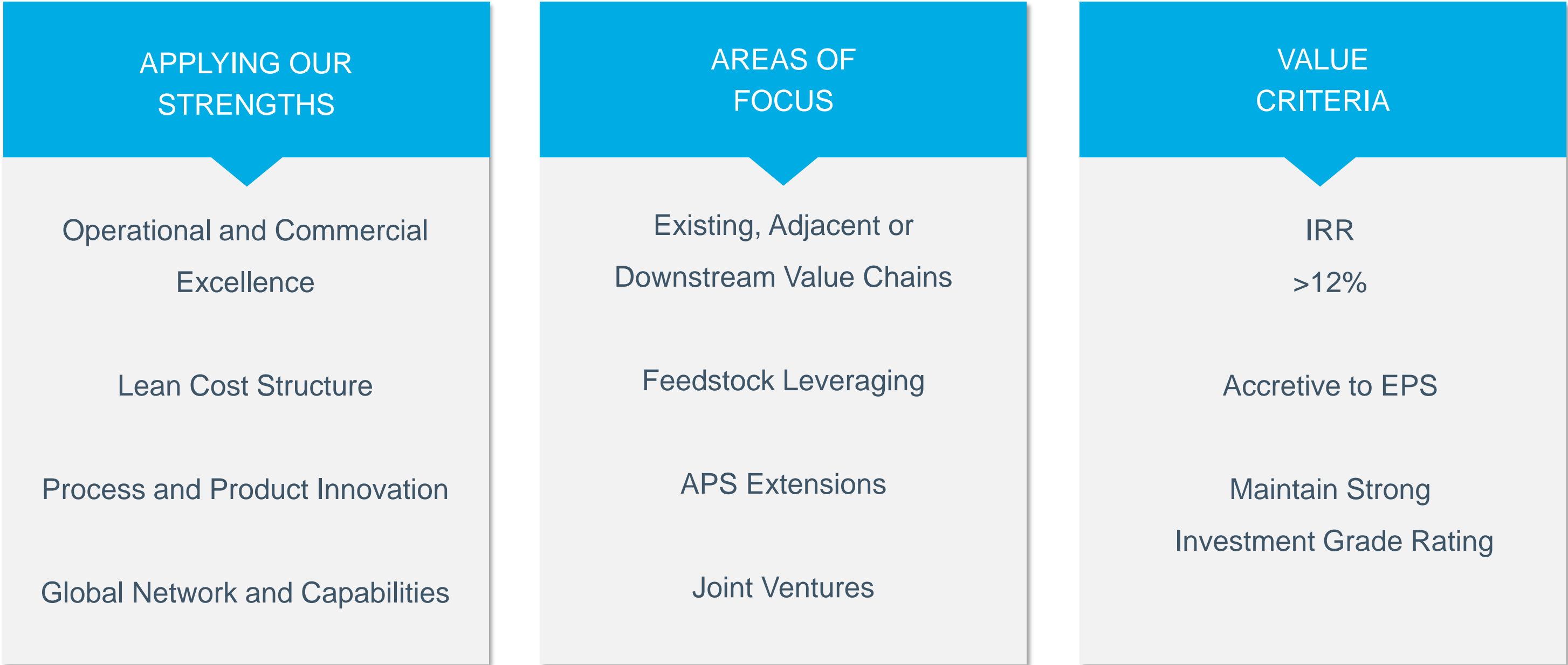
U.S. Ethylene 250 KT

*Hyperzone* PE 500 KT

*Spherizone* PP 500 KT

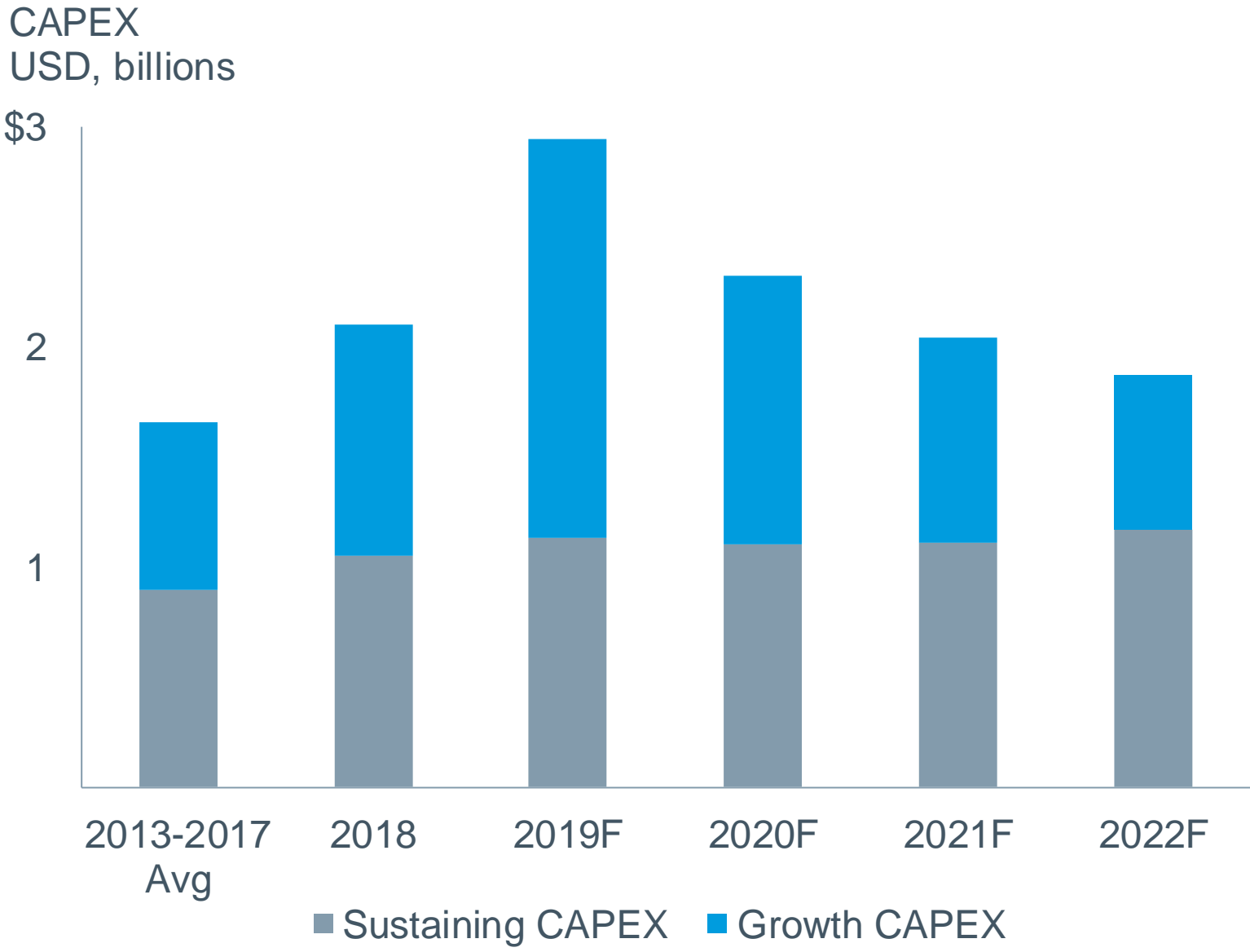
# DISCIPLINED APPROACH TO INORGANIC GROWTH

SELECTIVE, FOCUSED AND VALUE-DRIVEN



# MODERATING CAPITAL EXPENDITURE PROFILE

COMPLETION OF HYPERZONE AND PO/TBA WILL INCREASE FREE CASH FLOW



- 1 2013-2017 INVESTMENTS**  
High-return debottlenecks
- 2 NEAR-TERM GROWTH INVESTMENTS**  
*Hyperzone* PE and PO/TBA are the largest investment from 2018 to 2021
- 3 MODEST CAPEX FORECAST**  
Highly focused, mid-sized projects  
Total CAPEX stepping down to **\$1.9 B by 2022**

Note: Sustaining CAPEX is maintenance and HSE capital expenditures.

# INVESTMENTS DRIVING GROWTH AND VALUE

FOCUSED, HIGH-RETURN INVESTMENTS DRIVING EBITDA GROWTH

## SMALL-MEDIUM PROJECTS

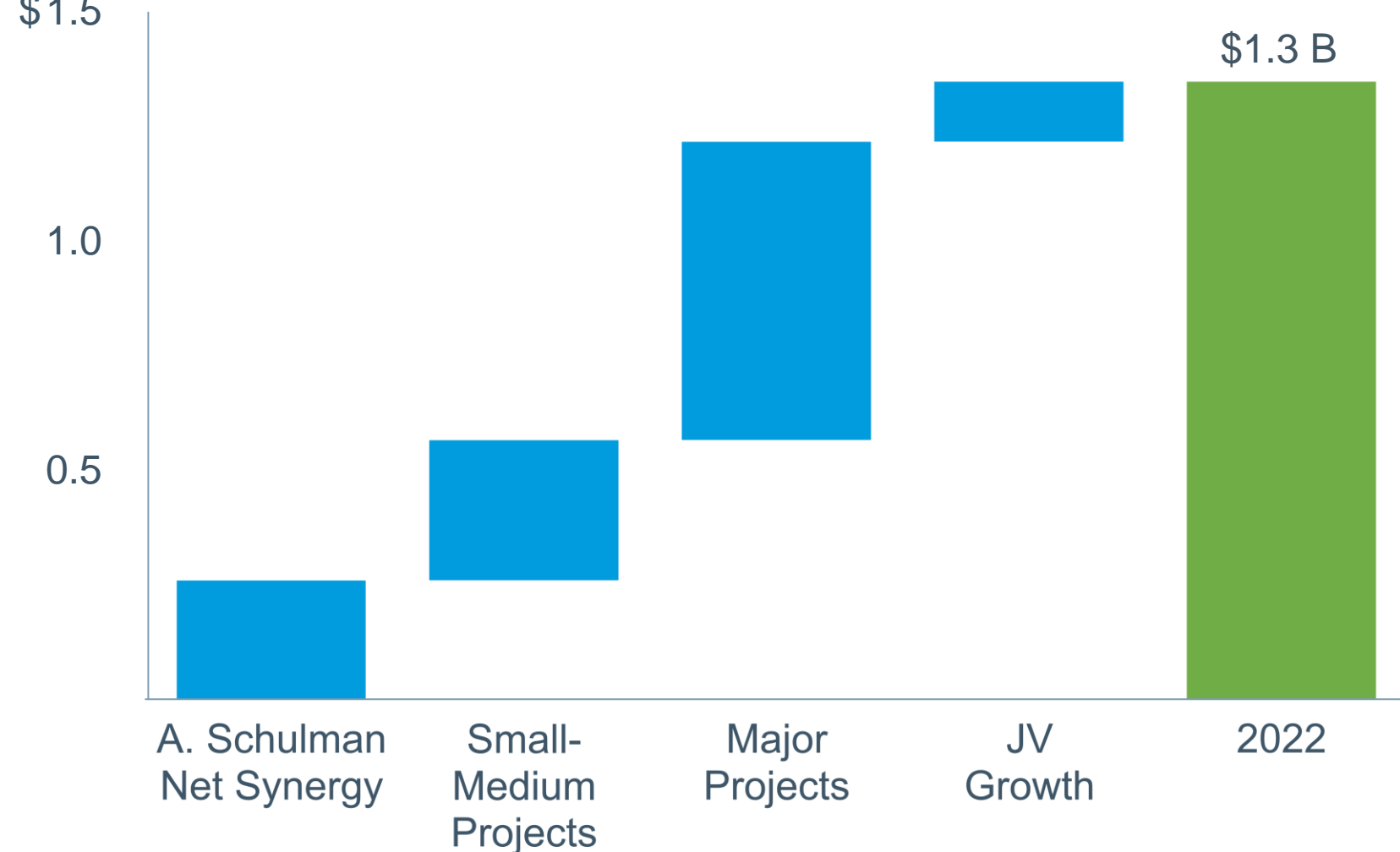
(>150 Projects)

- Polypropylene debottlenecks
- Energy-saving initiatives
- New capacity for compounds and catalysts

## MAJOR PROJECTS

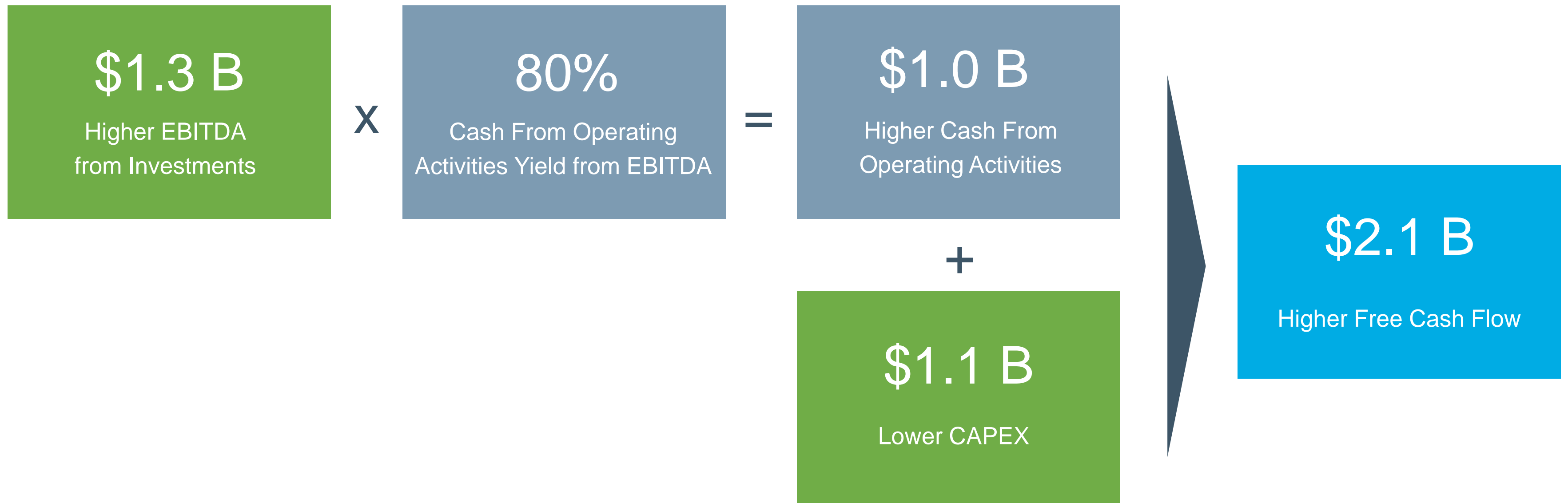
- *Hyperzone PE*
- PO/TBA

Estimated Annual EBITDA Improvement from 2019 to 2022  
USD, billions  
\$1.5



# DELIVERING HIGHER FREE CASH FLOW

HIGHER EBITDA AND LOWER CAPEX INCREASE FREE CASH FLOW IN 2022 OVER 2019



# LEADING + ADVANTAGED + DISCIPLINED

WELL-POSITIONED TO ENHANCE VALUE CREATION

## RESILIENT FOCUSED PORTFOLIO

Integrated Polymers

Technology Enabled Products

Intermediates & Fuels

## LEADING ADVANTAGED POSITIONS

Best Operator

Attractive Products/Markets

Feedstock Advantages

Culture of Innovation

## DISCIPLINED FINANCIAL POLICIES

Efficient Cash Generation

Secure, Progressive Dividend

Committed to Strong  
Investment Grade

## TANGIBLE GROWTH AHEAD

Small-Medium Projects

Major Projects

Joint Ventures

Selective M&A

# QUESTIONS



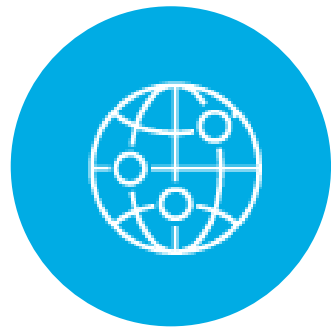
# INTEGRATED POLYMERS



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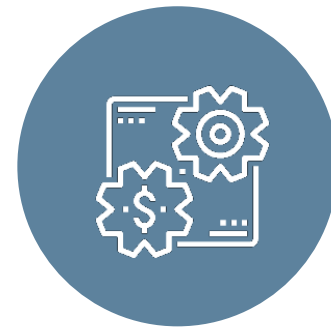
# INTEGRATED POLYMERS

DELIVERING VALUE THROUGH DIFFERENTIAL PERFORMANCE



## LEADING POSITIONS

Global portfolio of assets  
balancing advantaged  
feedstocks and local market  
presence



## ADVANTAGED BY DIFFERENTIATION

Superior feedstock flexibility,  
operational excellence and  
differentiated products driving  
margin premiums



## DISCIPLINED GROWTH

Focused, high-return  
investments supported by  
advantaged feedstocks,  
leading technologies and  
access to emerging markets



## ADVANCING SUSTAINABILITY

Innovative business models  
creating value through  
sustainable products

# INTEGRATED POLYMERS

AN INDUSTRY LEADER WITH A GLOBAL PRESENCE

**\$3.5 B**  
EBITDA  
LTM 2Q19

**#2**  
ETHYLENE  
NORTH AMERICA  
Global Capacity: 7.6 MMton

**#1**  
POLYETHYLENE  
EUROPE  
Global Capacity: 5.3 MMton

**#2**  
POLYPROPYLENE  
Globally  
Global Capacity: 5.5 MMton



Note: LyondellBasell capacity includes proportional share of joint venture capacity. Polypropylene capacity includes *Catalloy*. Both capacity and product ranking are as of December 31, 2018.

# ADVANTAGED THROUGHOUT THE CYCLE

## LEVERAGING OUR DIFFERENTIAL PERFORMANCE

### RECENT HEADWINDS

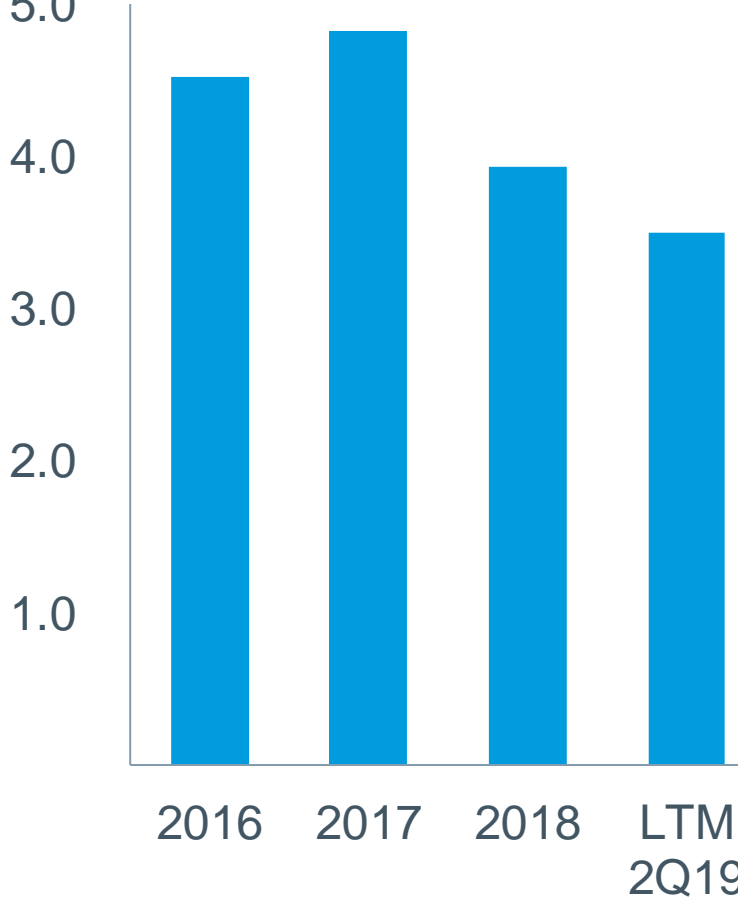
- 4Q18 crude oil price decline and destocking
- Global trade uncertainty

### COMPETITIVE ADVANTAGES

- Operational excellence
- Feedstock flexibility
- Premium margins
- Proven joint venture business model

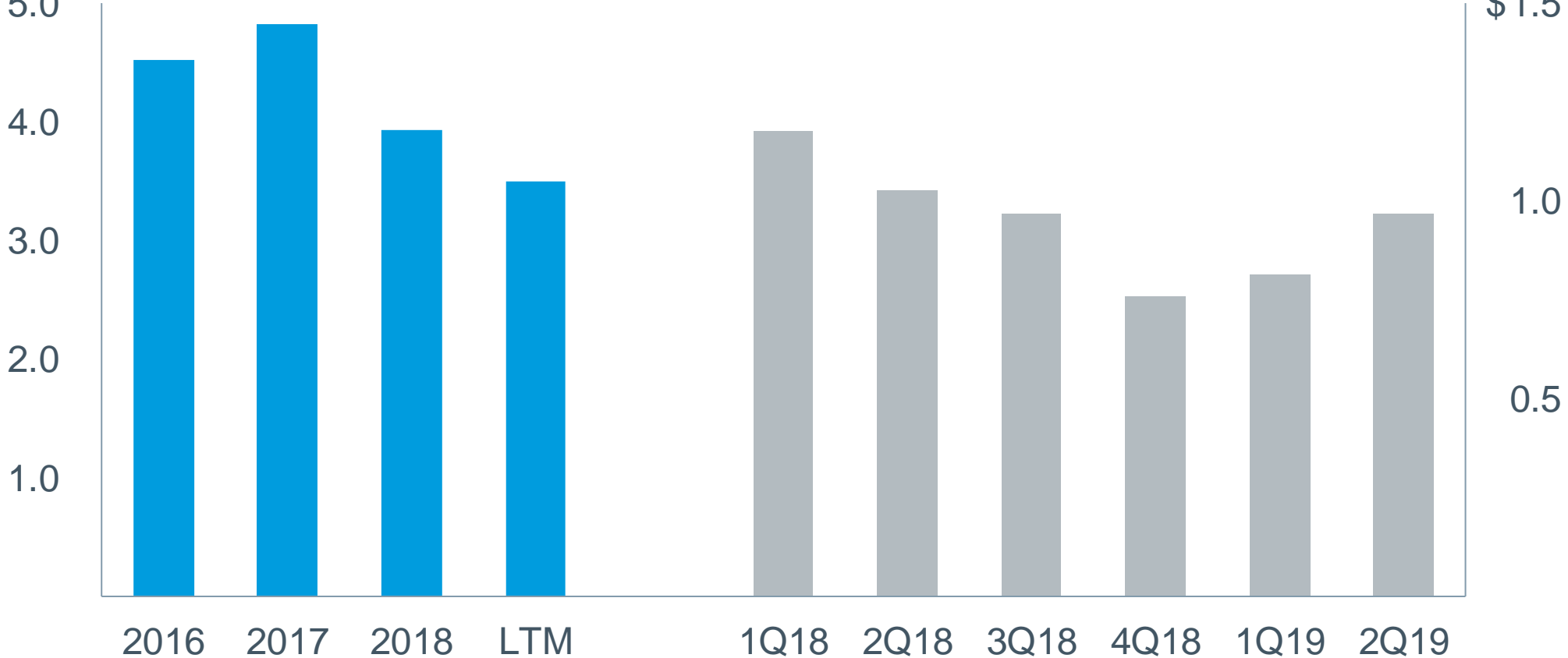
Integrated Polymers  
Annual EBITDA  
USD, billions

\$ 5.0



Integrated Polymers  
Quarterly EBITDA  
USD, billions

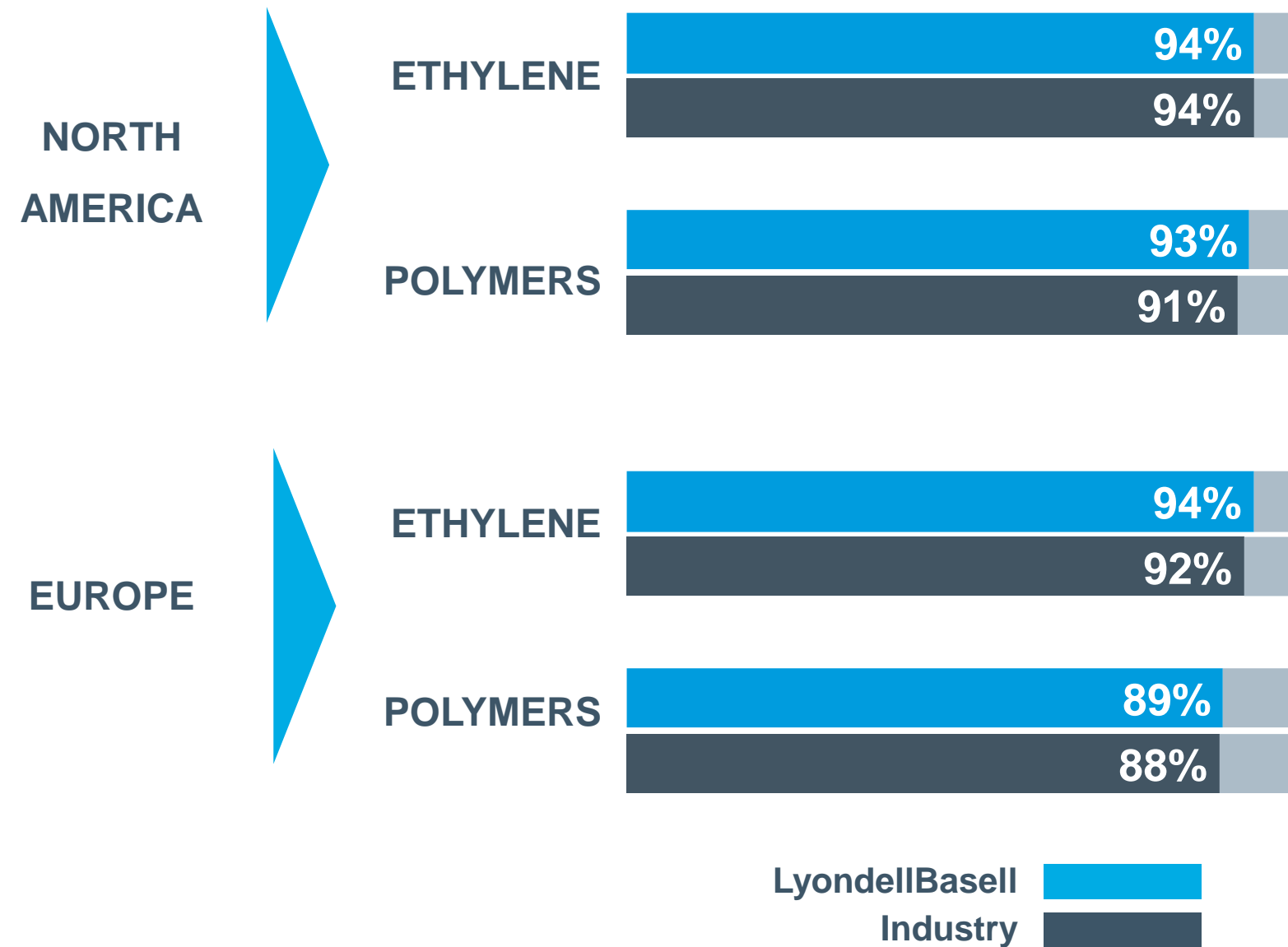
\$ 1.5



# OPERATIONAL EXCELLENCE

UTILIZATION EXCEEDING INDUSTRY BENCHMARKS

2016-2018 Average Operating Rates



Consistent maintenance through the cycle

Optimized turnaround planning

Continuous process improvement

Increased predictive maintenance



# FEEDSTOCK FLEXIBILITY

## FULL-RANGE ASSETS PROVIDING VALUE FROM ADVANTAGED FEEDSTOCKS

### NORTH AMERICA

- Cost-advantaged NGLs supplying our 2 Midwest crackers
- 3 full-range feedstock crackers in USGC
- Y-grade feedstock capable at all 4 USGC crackers

### EUROPE

- Capability to run ~50% advantaged non-naphtha feedstocks

5.4

**MMton  
Ethylene Capacity**

LyondellBasell  
North America

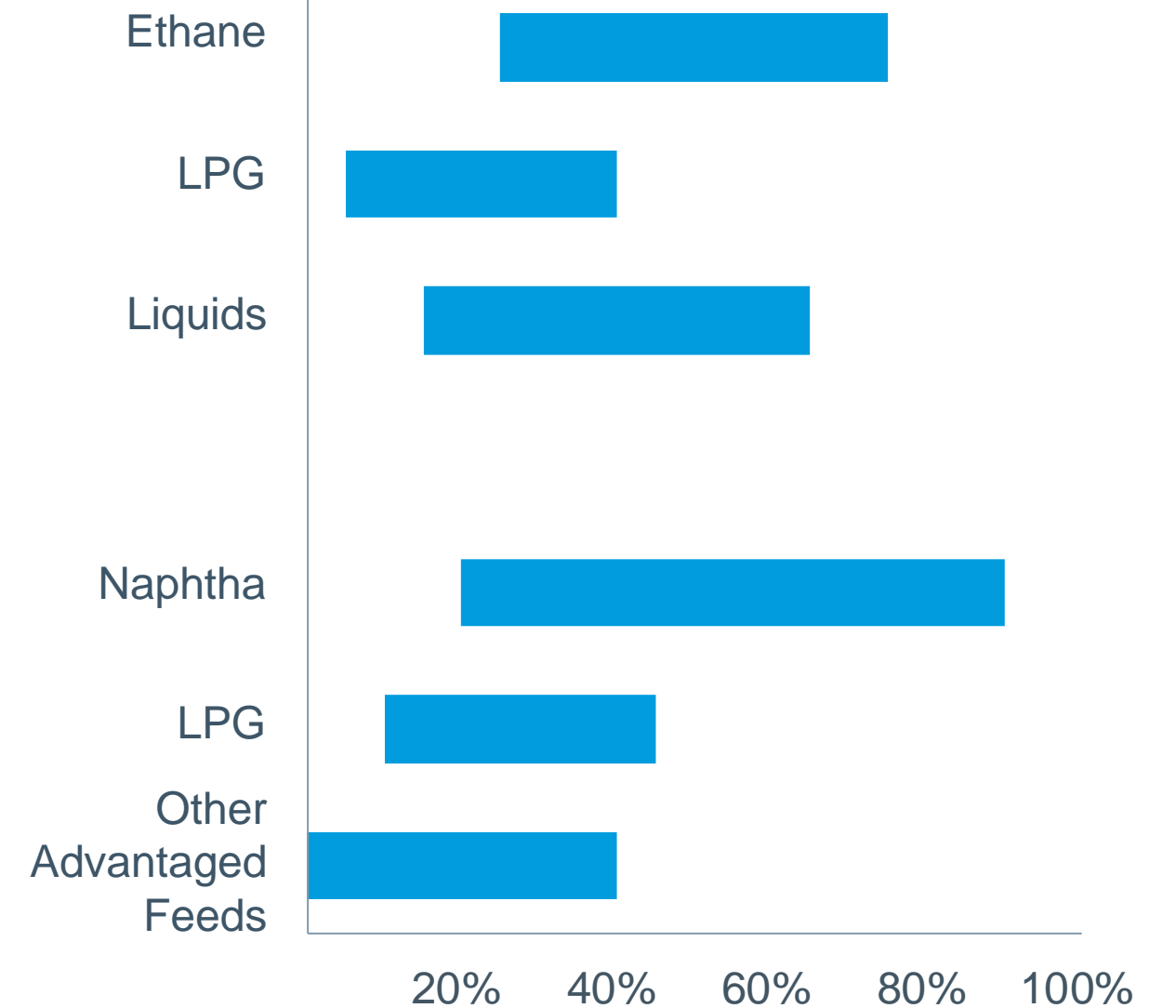
1.9

**MMton  
Ethylene Capacity**

LyondellBasell  
Europe

NORTH  
AMERICA

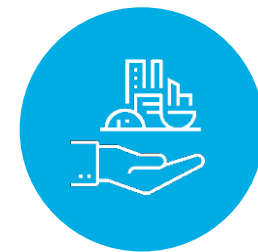
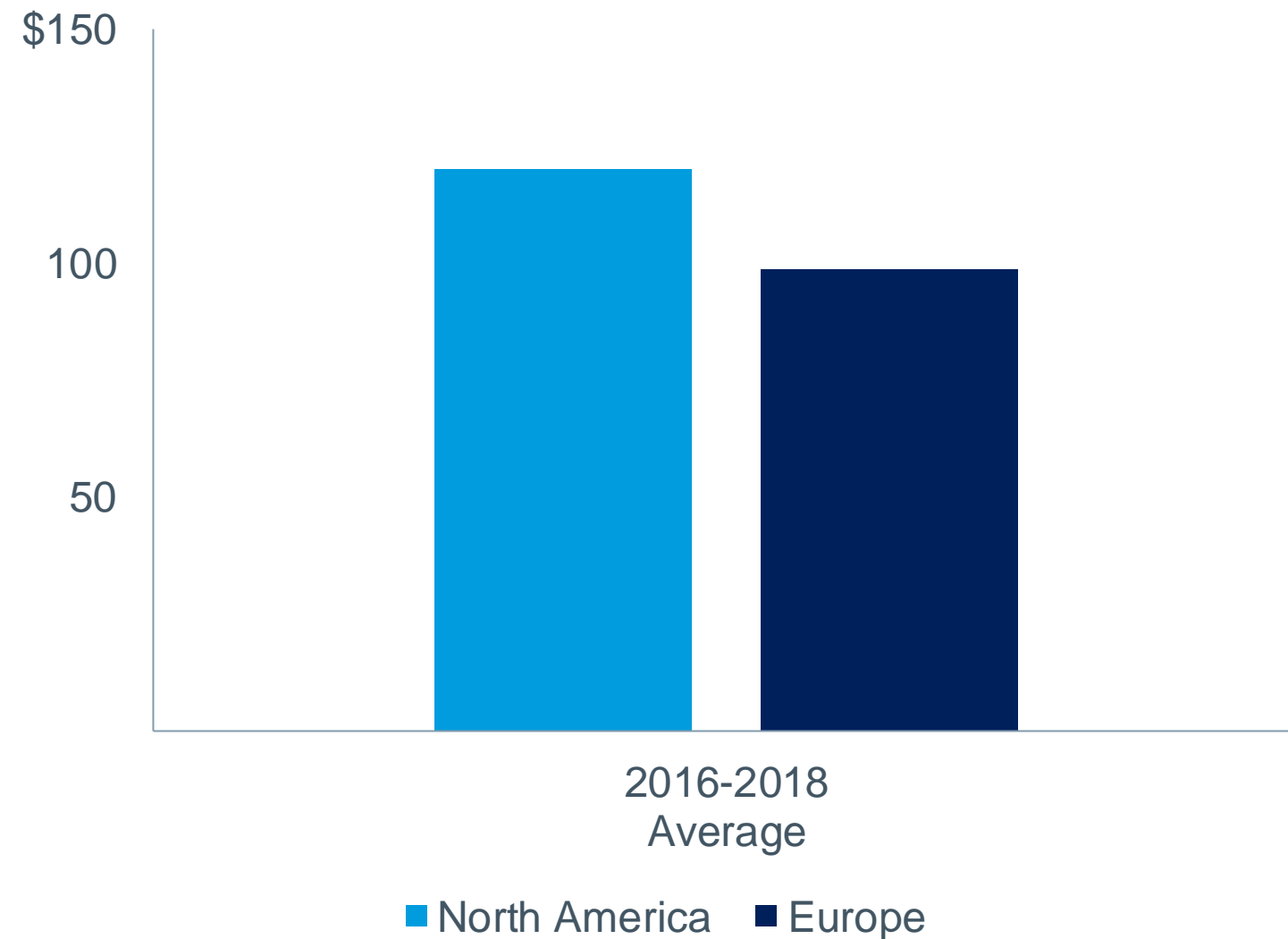
EUROPE



# INTEGRATED POLYETHYLENE PROFITABILITY

PREMIUM MARGINS THROUGH LOW COSTS AND DIFFERENTIATED PRODUCTS

Integrated Polyethylene Margin Above Industry  
USD/ton



## OPTIMAL OPERATING COSTS

Driven by operational excellence and high feedstock flexibility



## POLYMER DIFFERENTIATION

Targeting premium markets through expertise in technology and focus on customer needs

# GLOBAL POLYETHYLENE

## HIGH OPERATING RATES LIKELY TO PERSIST

### RECENT PAST

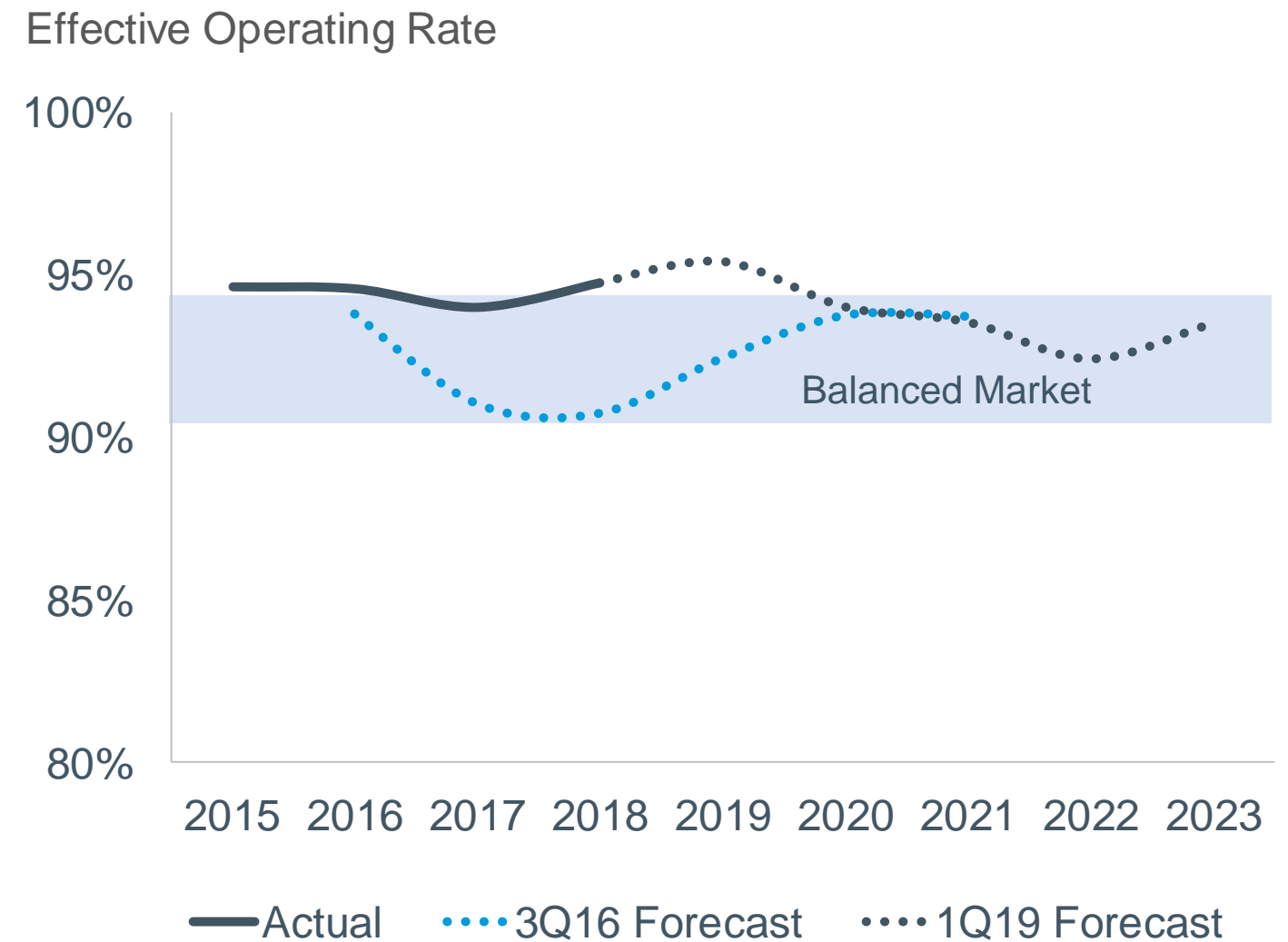
- Consultants predicted low operating rates 2017-2018
- Typical delays in new capacity maintained high operating rates

### CURRENT ENVIRONMENT

- Global demand growing by 4%
- Current operating rate above balanced market range of 90-94%

### 2020-2023 FORECAST

- Consultants predict a low operating rate in 2022
- Capacity additions forecasted, primarily in China
- Typical delays likely to improve the operating rate forecast





# ***HYPERZONE PE UPDATE***

## **A NEW PLATFORM FOR GROWTH**

### **INVESTMENT STRATEGY**

- Delivering the latest generation of LyondellBasell polymer technology
- Providing lightweight, crack-resistant polymers with high processability
- Enabling the production of cost-effective and durable plastics

### **CURRENT STATUS**

- Commissioning underway
- Full year of production expected for 2020



**500 KT**

HDPE  
per year

**\$170-210 MM**

ESTIMATED EBITDA  
per year

# JOINT VENTURES

HIGH RETURN INVESTMENT PROVIDING A STRONG SOURCE OF CASH FLOW

**\$335 MM**

DIVIDEND

Annually

2016-2018 Average

**\$325 MM**

EQUITY INCOME

Annually

2016-2018 Average

**\$94 MM**

COMMISSION INCOME

Annually

2016-2018 Average

ADDITIONAL BENEFITS

Technology Licensing &

Catalyst Sales

## ADVANTAGED JOINT VENTURE BUSINESS MODEL

- Eight olefin and polyolefin JVs with 5 MMton of total polyolefin capacity
- Expanding market presence with LyondellBasell-branded products
- Access to regions with advantaged feedstocks and lower capital costs
- High-quality local partners
- High-return investments through leveraged project financing

# NEW CHINA JOINT VENTURE

HIGH-RETURN PROJECT IN THE FASTEST-GROWING MARKET

MOU WITH LIAONING BORA ENTERPRISE GROUP



## ADVANTAGES

- Serving Chinese domestic market through LyondellBasell marketing network
- Expanding our global network using LyondellBasell technology and catalysts
- Flexible feedstock sourced from partner's adjacent world scale refinery
- Local partner with proven construction capabilities
- Overall construction ~50% complete

## 50/50 INTEGRATED CRACKER INVESTMENT

- 1.1 million mt flexible naphtha / LPG cracker with 800 KT PE and 600 KT PP
- Low total project costs ~\$2.6 billion: 50-60% of USGC, EU or Middle East
- Low equity requirement with ~2/3 project debt financing

**50 / 50**

Joint Venture

**2H 2020**

Start up



# SERVING GROWING DEMAND FOR SUSTAINABLE PRODUCTS

## QUALITY CIRCULAR PLASTICS (QCP) – AN INNOVATIVE BUSINESS MODEL



### PARTNERING ON FEEDSTOCKS

SUEZ providing cleaned, shredded, and sorted post-consumer plastic waste materials

### INNOVATIVE TECHNOLOGY

LyondellBasell applying expertise in polymer technology and formulation to transform plastic waste into premium polyolefins suitable for premium products

### ATTRACTIVE END MARKETS

Sustainable packaging and products fulfilling sustainability demands from global brand owners, governments and society

# DISCIPLINED GROWTH THROUGH INVESTMENT

GROWING CASH FLOW IN STRATEGIC MARKETS THROUGH OUR LEADING TECHNOLOGIES



## RECENT PROJECTS 2017-2019

JV Expansions PP 115 KT  
Debottlenecked NA PP 120 KT  
QCP Joint Venture



## CURRENT PROJECTS 2019-2022

*Hyperzone* PE 500 KT  
JV *Spheripol* PP S. Korea 400 KT  
JV *Spherizone* PP Thailand 250 KT



## FUTURE INVESTMENT 2020+

JV Cracker and Polymers in China  
USGC Ethylene Expansion 250 KT  
*Hyperzone* PE 500 KT  
*Spherizone* PP 500 KT  
Sustainability business model growth

# INTEGRATED POLYMERS

DELIVERING VALUE THROUGH DIFFERENTIAL PERFORMANCE

## LEADING POSITIONS

Global portfolio of assets balancing advantaged feedstocks and local market presence

## DIFFERENTIAL PERFORMANCE

Superior feedstock flexibility, operational excellence and differentiated products driving margin premiums

## DISCIPLINED GROWTH

Focused, high-return investments supported by advantaged feedstocks, leading technologies and access to emerging markets

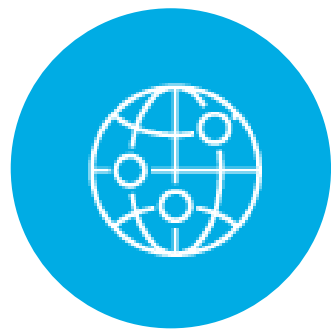
# TECHNOLOGY ENABLED PRODUCTS



**lyondellbasell**  
*Advancing Possible*

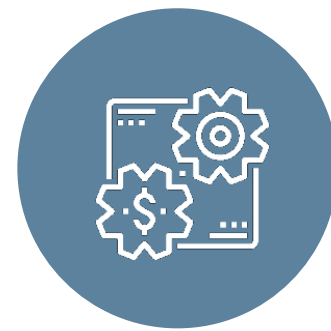
# TECHNOLOGY ENABLED PRODUCTS

ENHANCING VALUE THROUGH PROPRIETARY TECHNOLOGIES, EXPERTISE AND PRODUCTS



## LEADING POSITIONS

Technologies, catalysts and materials that support and expand our industry-leading positions



## ADVANTAGED TECHNOLOGIES

Deep knowledge advancing our proprietary technologies, licensed processes, and tailored products



## DISCIPLINED GROWTH

Focused, high-return investments enabled by leading technologies and capabilities



## ADVANCING SUSTAINABILITY

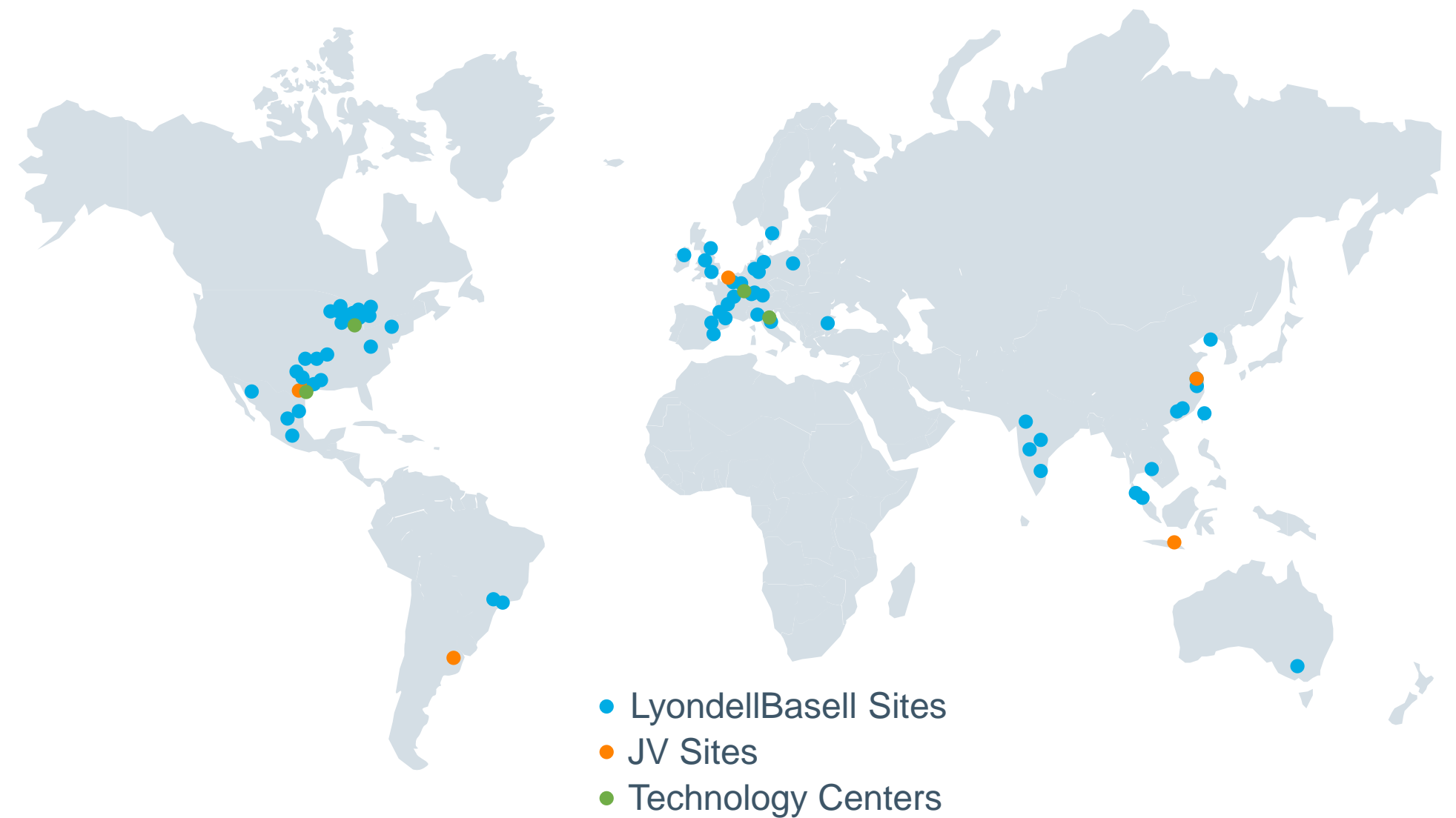
Innovative technologies, expertise and partnerships creating a more circular economy for plastics



# TECHNOLOGY ENABLED PRODUCTS

WE ARE AN INDUSTRY LEADER WITH A GLOBAL PRESENCE

<b>\$1.4 B</b> EBITDA LTM 2Q19	<b>#1</b> POLYOLEFIN LICENSING GLOBALLY
<b>#1</b> PP COMPOUNDS GLOBALLY Global Capacity: 1.2 MMton	<b>#2</b> PROPYLENE OXIDE GLOBALLY Global Capacity: 1.3 MMton



Note: LyondellBasell capacity includes proportional share of joint venture capacity. Both capacity and product ranking are as of December 31, 2018.

# ADVANTAGED TECHNOLOGIES AND PRODUCTS

## GROWING EBITDA THROUGH TECHNOLOGIES AND TAILORED PRODUCTS

### LICENSED POLYOLEFIN TECHNOLOGIES

- Leading process technologies and catalysts for polyethylene and polypropylene

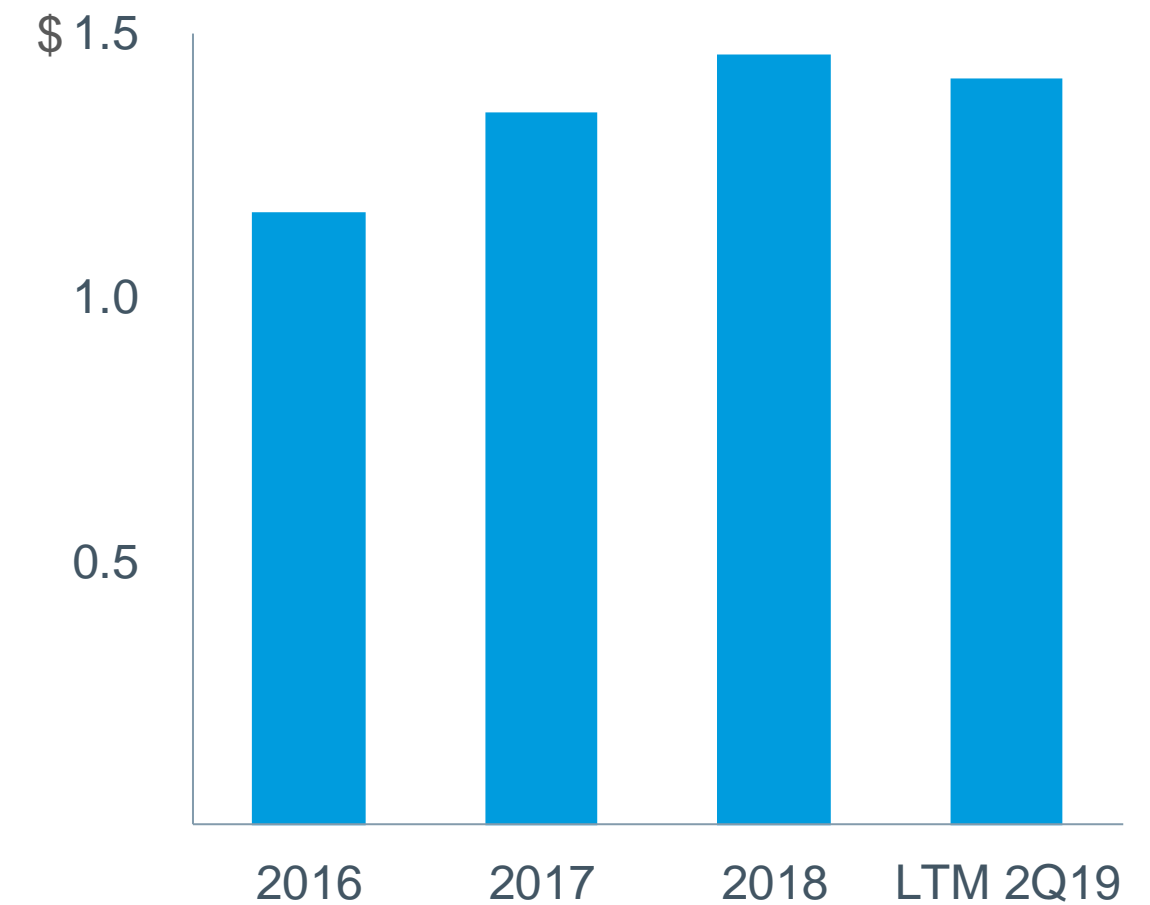
### PROPRIETARY TECHNOLOGIES

- Cost-advantaged technologies for propylene oxide (PO/TBA and PO/SM)
- Unique and advanced polymers such as *Catalloy* and Polybutene-1

### TAILORED PRODUCTS

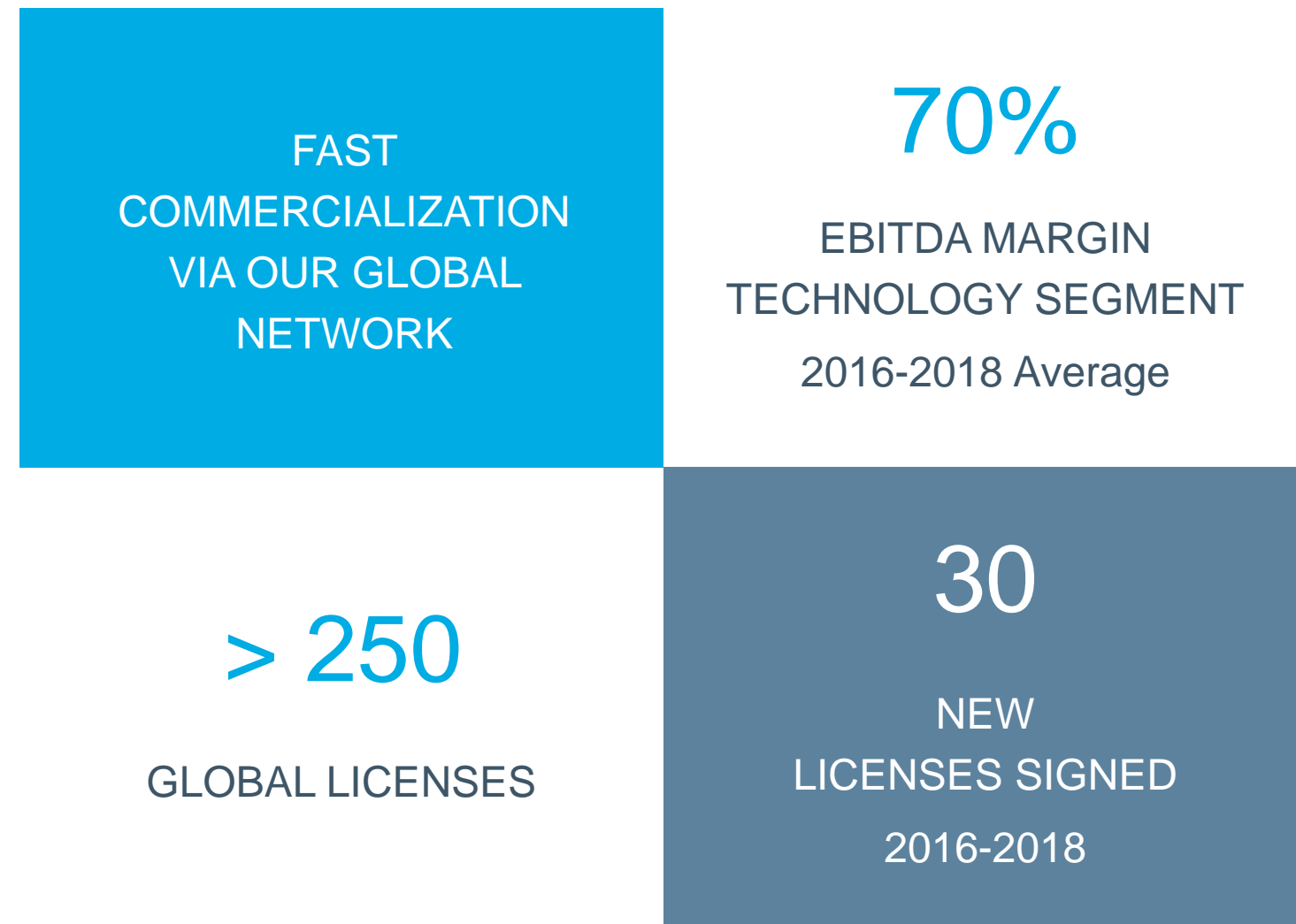
- Customized products from our Advanced Polymer Solutions segment
- Sustainable, recycled plastics from our QCP joint venture

Technology Enabled Products  
EBITDA  
USD, billions

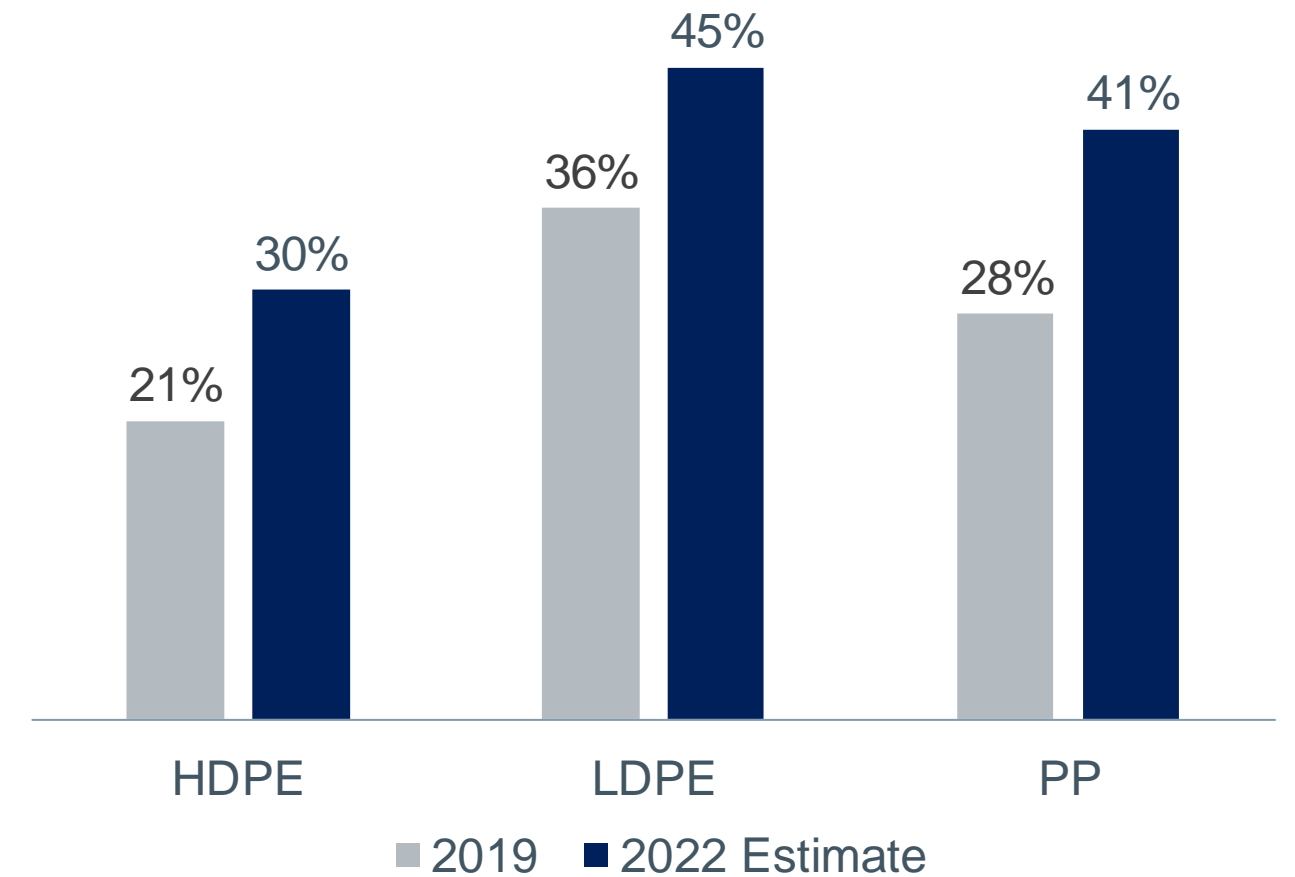


# LICENSED POLYOLEFIN TECHNOLOGIES

IMPROVING PROFITABILITY WITH LICENSING WINS

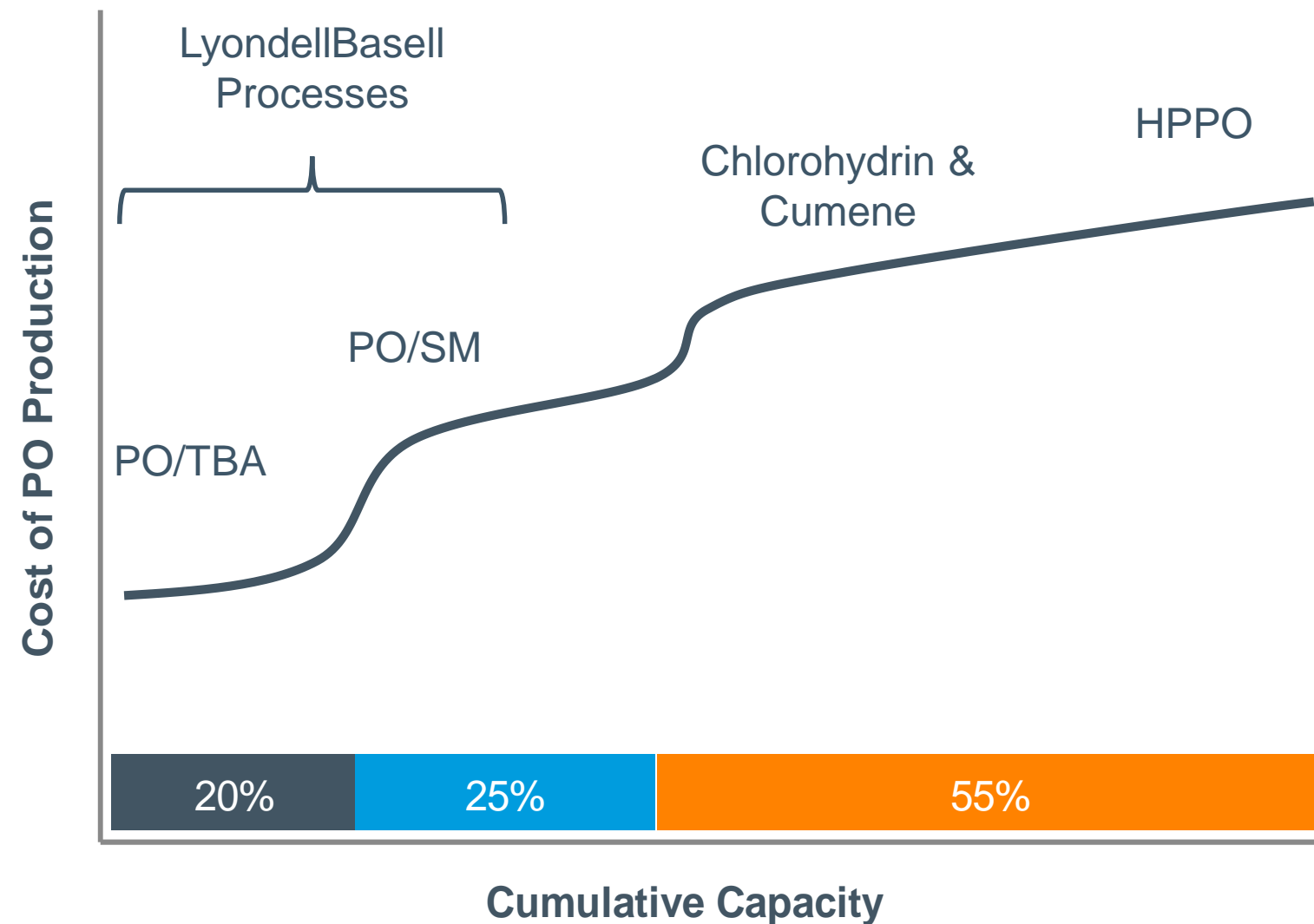


Lyondellbasell's Licensing Share of Polyolefin Capacity



# LEADING PROPRIETARY PO TECHNOLOGY

OUR CO-PRODUCT PROPYLENE OXIDE PROCESSES PROVIDE COST ADVANTAGES



## PROPRIETARY TECHNOLOGY

- Significantly cost advantaged
- Supported by expertise and operational experience

## LYONDELLBASELL STRATEGY

- Selectively licensed to joint ventures
- Operate 8 plants globally: 5 PO/TBA, 3 PO/SM
- PO/SM JV in China
- Building world's largest PO/TBA plant
- Additional JV-based expansion to serve Asian demand

# PO/TBA PLANT UPDATE

DISCIPLINED GROWTH MEETING GLOBAL DEMAND

## INVESTMENT STRATEGY

- Meeting rising demand for urethanes and clean-burning oxyfuels
- Capturing cost-advantaged U.S. Gulf Coast feedstocks

## PROJECT MILESTONES AND PLAN

- Broke ground August 2018
- Estimated investment \$2.4 B
- 20% construction completion as of September 2019
- Large equipment deliveries underway
- Planned start 2H 2021



**470/1,000 KT**  
PO/TBA  
per year

**\$400-450 MM**  
ESTIMATED EBITDA  
per year

# PROPYLENE OXIDE END-USE MARKETS

SERVING DEMAND FOR A WIDE RANGE OF POLYURETHANE AND SOLVENT PRODUCTS

Propylene Oxide  
+  
Isocyanates

Polyurethanes:  
Foams, coatings,  
elastomers, etc.



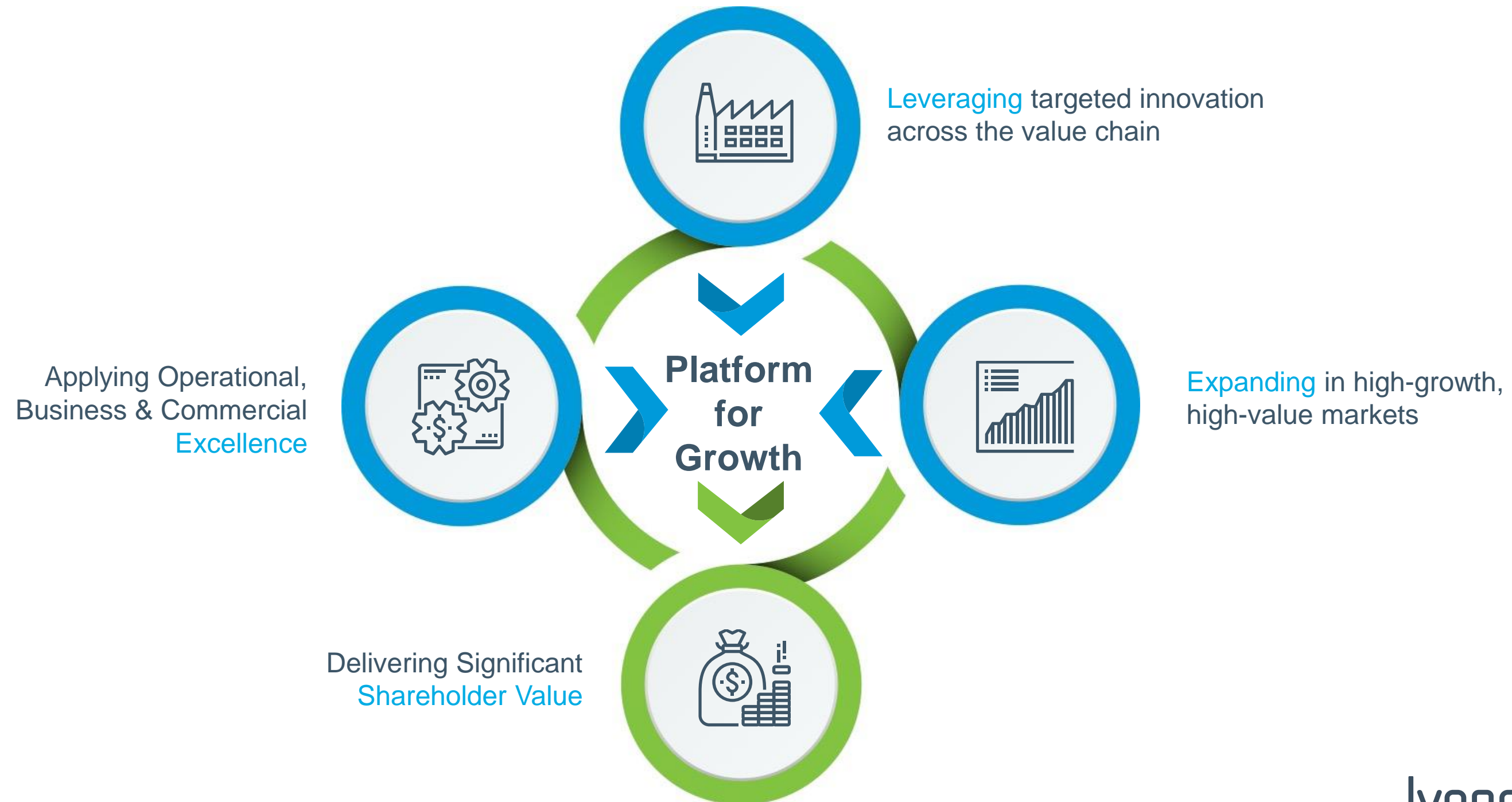
4%

**Polyurethane**  
global demand  
growth per year



# TAILORED PRODUCTS – ADVANCED POLYMER SOLUTIONS

A PLATFORM FOR GROWTH WITH EXPANDED REACH IN ATTRACTIVE MARKETS

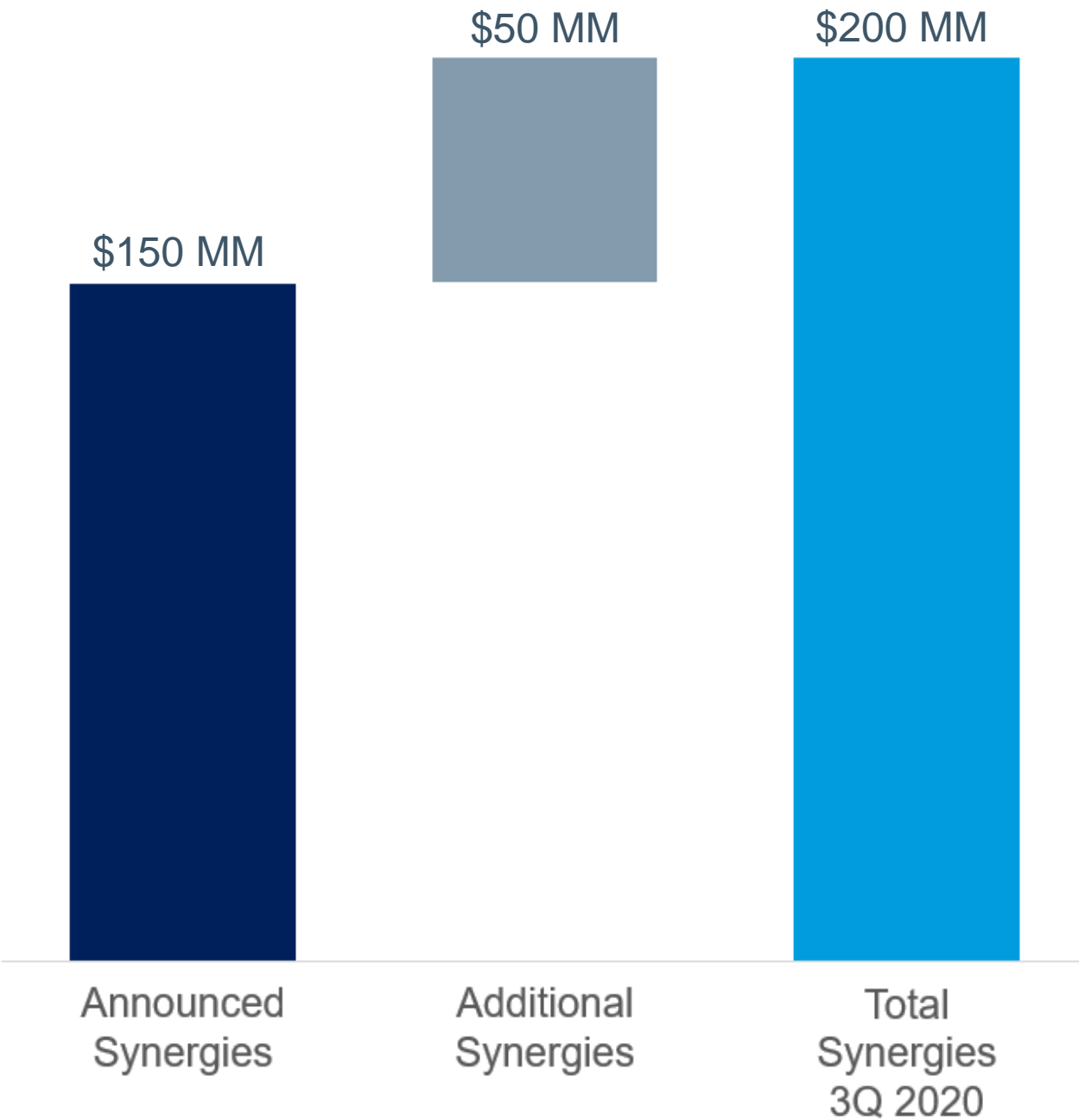


# SUCCESSFUL SYNERGY CAPTURE

INCREASING CASH FLOW THROUGH THE INTEGRATION OF A. SCHULMAN

## KEY ENABLERS OF OUR INTEGRATION TOOLKIT

- Focused integration leadership
- Centralized integration management office
- Single instance of ERP system
- Tax-efficient structure



Note: Announced synergies are the run rate as of June 30, 2019. Percent synergy allocation is the estimated allocation for the total synergies in 3Q 2020.



# ADVANCED POLYMER SOLUTIONS

SERVING A WIDE RANGE OF CUSTOMER APPLICATIONS



## Polymer Compound Market Revenues and Growth Rates

### PACKAGING & CONSUMER

\$14 B Market  
7.9% CAGR

### ELECTRONICS & APPLIANCES

\$10 B Market  
6.7% CAGR

### AUTOMOTIVE

\$14 B Market  
7.8% CAGR

### BUILDING & CONSTRUCTION

\$8 B Market  
6.7% CAGR

### AGRICULTURE

\$3 B Market  
5.0% CAGR

Note: Industry consultant research. Market product application revenues in 2018. Compound Annual Growth Rates (CAGR) for product application revenues forecasted over 2019-2026 time period.

# SUSTAINABILITY INITIATIVES

INVESTING IN INNOVATIVE TECHNOLOGY TO END PLASTIC WASTE



## MECHANICAL RECYCLING

QCP through joint venture with SUEZ



## MOLECULAR RECYCLING

Advancing innovation in collaboration with Karlsruhe Institute of Technology



## CIRCULAR PORTFOLIO

Enlarging our circular product portfolio with bio-feedstocks



# DISCIPLINED GROWTH THROUGH INVESTMENT

GROWING CASH FLOW IN STRATEGIC MARKETS THROUGH OUR LEADING TECHNOLOGIES



## PROPRIETARY & LICENSED TECHNOLOGY

*Hyperzone PE 500 KT (2019)*

*PO/TBA 470/1,000 KT (2021)*

*Hyperzone PE 500 KT (Future)*

*Spherizone PP 500 KT (Future)*



## TAILORED PRODUCTS

A. Schulman acquisition (2018)

APS platform growth (Future)



## SUSTAINABLE TECHNOLOGIES

QCP Joint Venture (2018)

Sustainability business model growth

# TECHNOLOGY ENABLED PRODUCTS

LEVERAGING PROPRIETARY TECHNOLOGIES, EXPERTISE AND PRODUCTS TO ENHANCE VALUE



## LEADING POSITIONS


A clear leader in our process and product technologies

## ADVANTAGED TECHNOLOGY ENABLING GROWTH

Focused, high-return investments that leverage our expertise and technical capabilities

## ADVANCING SUSTAINABILITY

Innovative technologies, expertise and partnerships creating a more circular economy for plastics



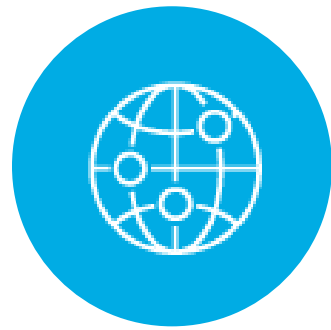
# INTERMEDIATES & FUELS



**lyondellbasell**  
*Advancing Possible*

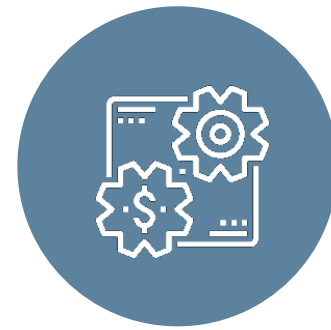
# INTERMEDIATES & FUELS

RESILIENT PORTFOLIO OF BUSINESSES CAPABLE OF CAPTURING MARKET OPPORTUNITIES



## LEADING POSITIONS

World-scale assets with low-cost feedstocks and integrated platforms



## ADVANTAGED TECHNOLOGIES

Proprietary propylene oxide co-product technologies, integrated chemicals and unique, complex refinery



## DISCIPLINED GROWTH

Focused, high-return investments supported by leading technologies and advantaged feedstocks or access to emerging markets



## ADVANCING SUSTAINABILITY

Sustainable products such as clean-burning oxyfuels, bio-based ETBE and renewable diesel

# INTERMEDIATES & FUELS

AN INDUSTRY LEADER WITH GLOBAL REACH

\$1 B

EBITDA  
LTM 2Q19

#2

OXYFUELS  
GLOBALLY

Global Capacity: 3.2 MMton

#2

STYRENE  
NORTH AMERICA

Global Capacity: 1.7 MMton

#3

METHANOL  
NORTH AMERICA

Global Capacity: 1.3 MMton



# RESILIENT PORTFOLIO

INTEGRATED VALUE CHAINS WELL-POSITIONED TO CAPTURE MARKET OPPORTUNITIES

## OXYFUELS & RELATED PRODUCTS

- High-value, clean-burning fuels upgrading low-cost butane

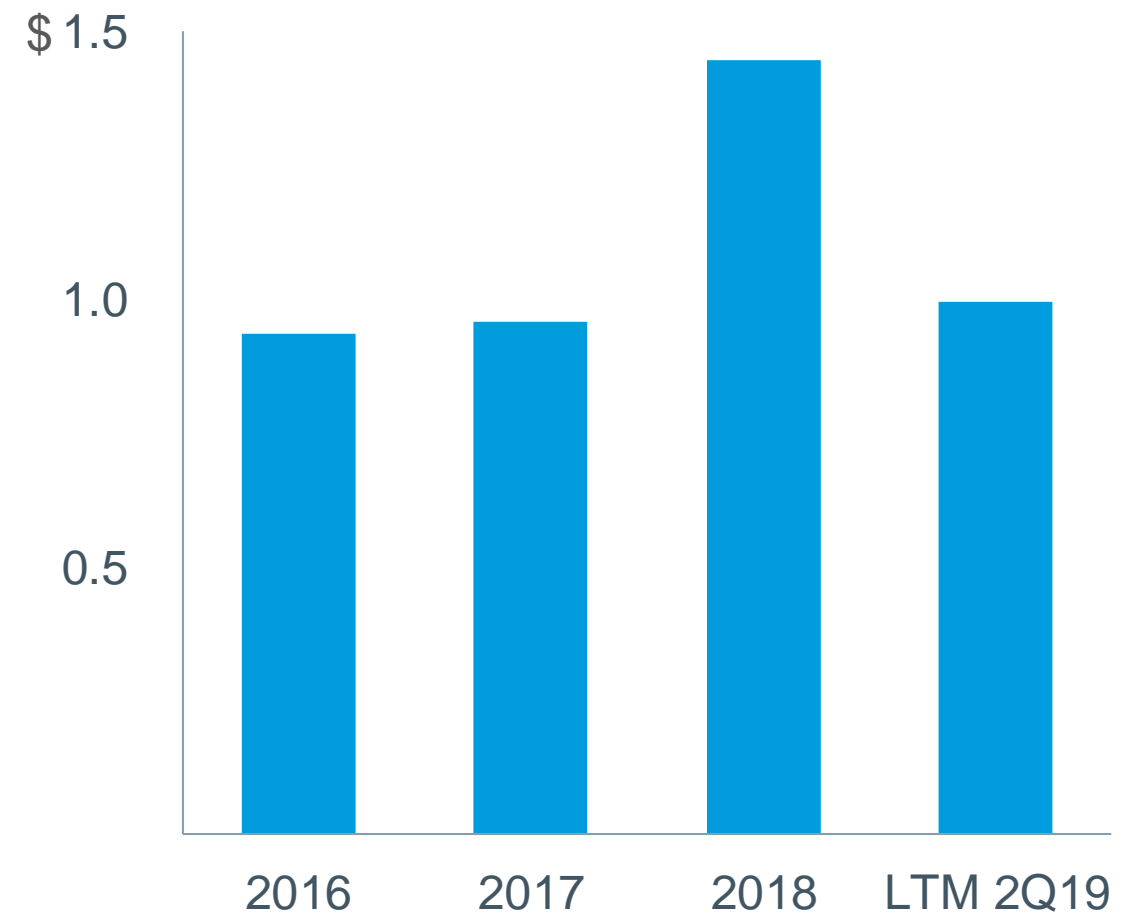
## REFINING

- Unique, complex and strategically located refinery
- Well-positioned for upside from low-sulfur marine fuels and clean Tier 3 gasoline

## INTERMEDIATE CHEMICALS

- Integrated businesses utilizing low-cost feedstocks
- Portfolio of products serving diverse downstream markets

Intermediates & Fuels  
EBITDA  
USD, billions





# OXYFUELS & RELATED PRODUCTS

## ADVANTAGED FEEDSTOCKS SERVING GLOBAL OCTANE DEMAND

### DRIVERS & CHALLENGES

- Global demand for high-octane gasoline driven by increased fuel efficiency standards
- Ethanol mandate provides competition but reduces air quality benefits

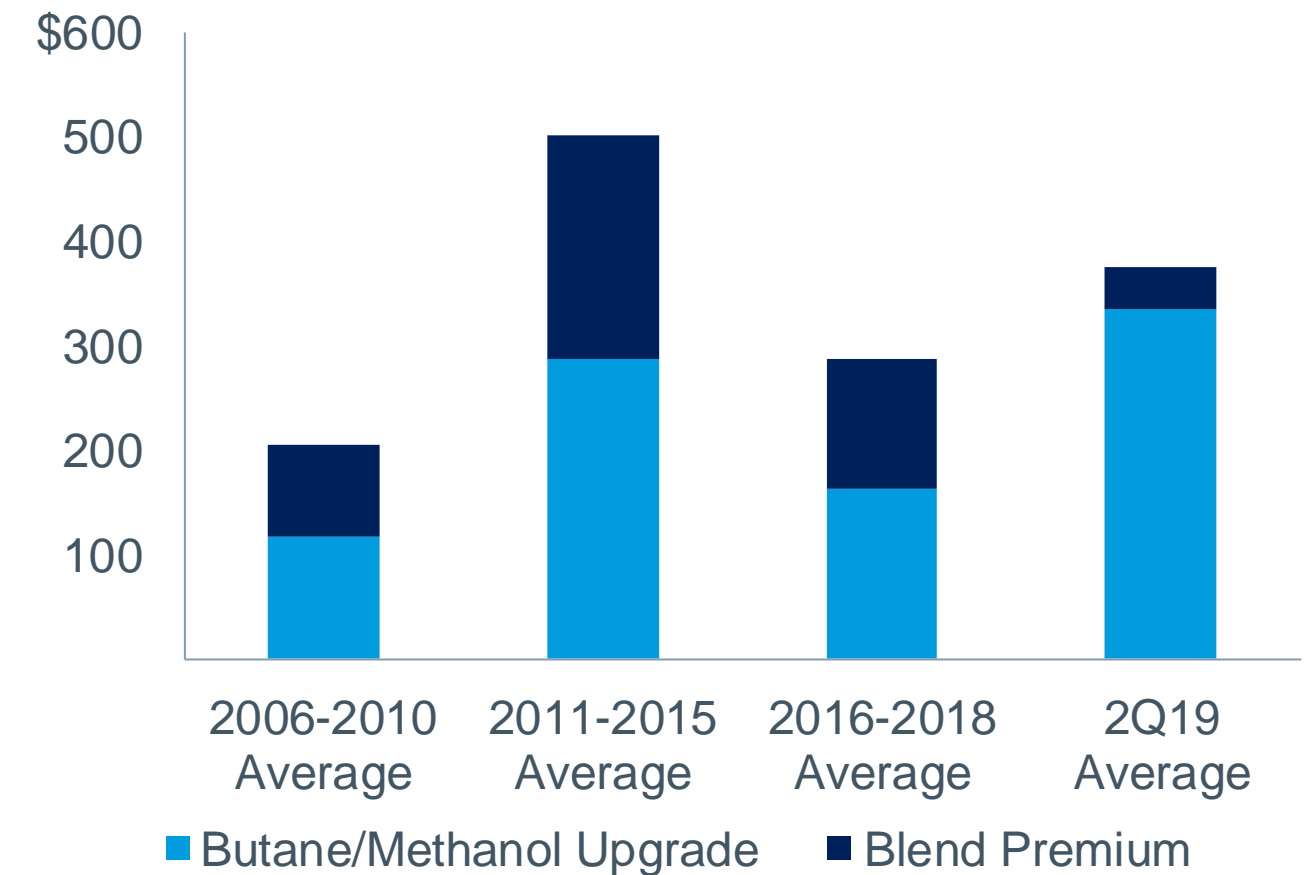
### BENEFITS

- Clean-burning, high value fuels created from methanol, ethanol and butane
- Co-product of our cost-advantaged propylene oxide technology

**1,000** MMton  
GLOBAL GASOLINE  
MARKET  
2019

**28** MMton  
GLOBAL OXYFUELS  
DEMAND  
2019

U.S. MTBE Upgrade Value  
USD/ton



# HOUSTON REFINERY

UNIQUE, COMPLEX AND STRATEGICALLY LOCATED

## CAPABILITIES

- Unique refinery with significant hydrotreating and coking capacity
- Facilities for full conversion of heavy, high-sulfur crude oils
- Designed to meet Tier 3 gasoline sulfur specifications

## POISED FOR REGULATORY BENEFITS

- IMO marine fuel oil sulfur regulations – January 2020

10

CONSECUTIVE QUARTERS

Reliable Operation

12.5

NELSON COMPLEXITY

50%

DISTILLATE YIELD

>35%

COKING / CRUDE

Capacity Ratio



# IMO 2020 BENEFIT

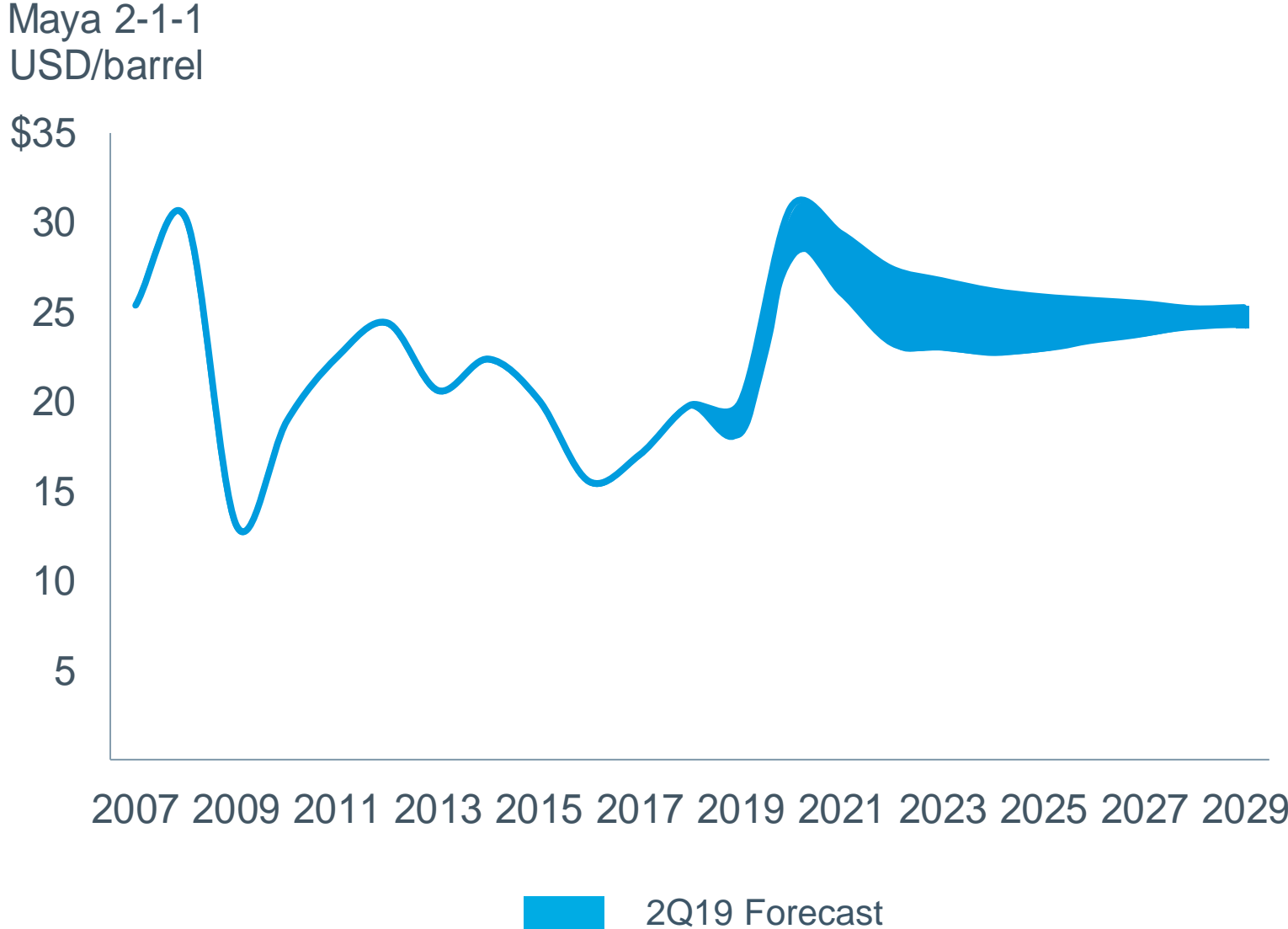
## MARINE FUEL OIL REGULATION DRIVING INDUSTRY CHANGE

### DRIVERS

- Demand surge for low sulfur marine fuels
- Improved discounts for heavy, sour crude oils
- Our investments are complete and poised to capture benefit

### MARGIN IMPROVEMENT

- \$1 increase in Maya 2-1-1 ~\$100 MM EBITDA



# STYRENE

## COST-ADVANTAGED PROPYLENE OXIDE CO-PRODUCT

### LEVERAGING ADVANTAGES

- Co-product of our advantaged PO technology
- 65% of our capacity utilizes low-cost U.S. feedstocks

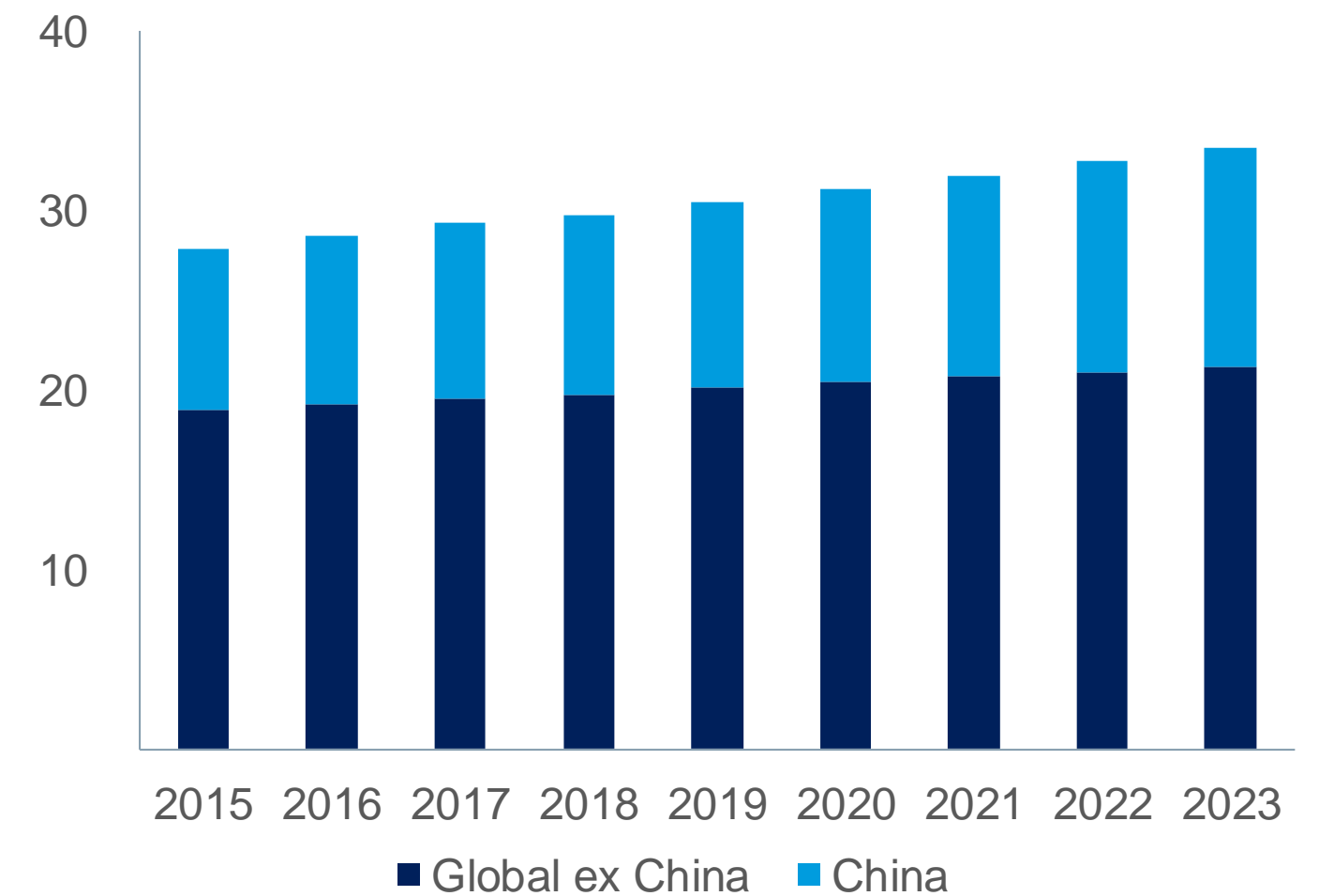
### CHINA OPPORTUNITY

- China represents more than 60% of global demand growth over next 5 years

**2.3%** GLOBAL  
DEMAND GROWTH  
Annually, 2019-2023

**4.2%** CHINA  
DEMAND GROWTH  
Annually, 2019-2023

Styrene Demand  
MMton

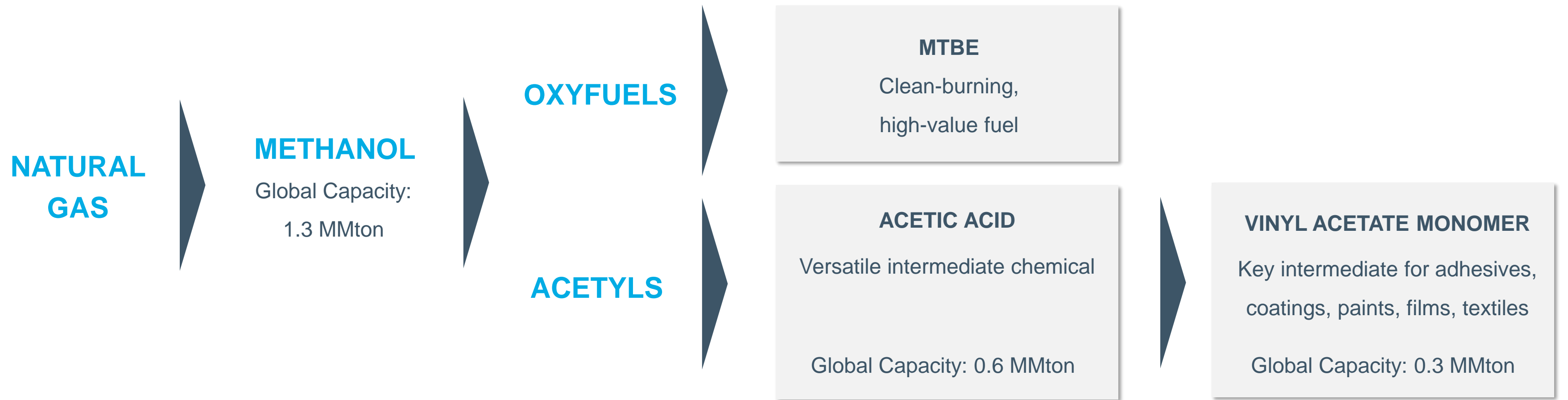


# METHANOL AND ACETYLS

## BENEFITTING FROM VERTICALLY INTEGRATED FACILITIES

### ADVANTAGED POSITION

- All assets utilize low-cost North American feedstocks
- Methanol integration into oxyfuels and acetyls increases to 100% with the new PO/TBA plant in 2021
- Acetic acid integration into vinyl acetate monomer (VAM) is 40%



# DIVERSE END USES

INTERMEDIATE CHEMICALS USED IN A WIDE VARIETY OF MARKETS

## STYRENE

Automotive parts, appliances,  
toys, building insulation,  
polyester resins



## ACETIC ACID

Textiles, containers,  
inks, coatings



## VINYL ACETATE MONOMER (VAM)

Adhesives, coatings, paints,  
films, safety glass



## OYXFUELS & RELATED PRODUCTS

Fuel blending components,  
lubricants, tires





# SUSTAINABLE BIO-BASED ETBE

ADVANCING SUSTAINABILITY THROUGH CLEAN-BURNING OXYFUELS AND BIO-BASED ETBE

Our ethyl tertiary-butyl ether (ETBE) is a clean burning gasoline component that improves engine performance, fuel efficiency and air quality. ETBE is partly made from renewable feedstocks, which means it has a lower greenhouse gas impact across its life cycle compared with fossil-based gasoline.

100%

BIO-ETHANOL

All of our ETBE is produced using bio-based ethanol

1.6 MMton

CO<sub>2</sub> EMISSIONS REDUCED  
Our ETBE used in Europe and Japan in 2018 reduced global CO<sub>2</sub> emissions

# DISCIPLINED GROWTH THROUGH INVESTMENT

GROWING CASH FLOW IN STRATEGIC MARKETS THROUGH OUR LEADING TECHNOLOGIES



## WHOLLY-OWNED ASSETS

PO/TBA 470/1,000 KT (2021)



## JOINT VENTURE ASSETS

Asia PO/SM (Future)



# INTERMEDIATES & FUELS

RESILIENT PORTFOLIO OF BUSINESSES WITH UPSIDE



## RESILIENT PORTFOLIO

Consistent performance across a wide range of economic environments

## ADVANTAGED TECHNOLOGY ENABLING GROWTH

Co-product technologies and integrated value chains supporting focused, high-return investments

## IMO 2020 UPSIDE

Well-positioned to capture market opportunities

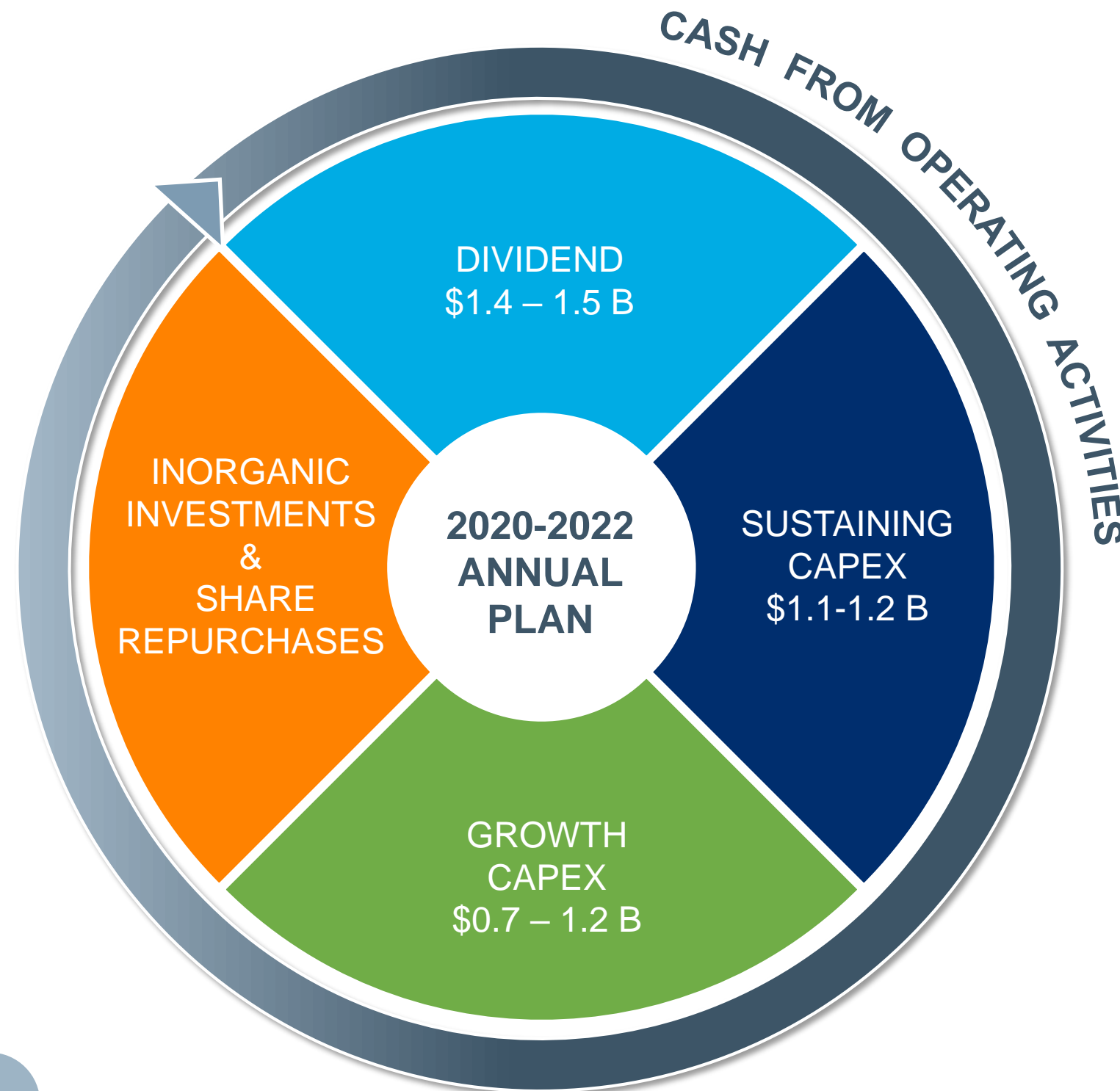


# **DISCIPLINED** APPROACH TO **CAPITAL ALLOCATION AND VALUE CREATION**



# DISCIPLINED CAPITAL ALLOCATION

CLEAR FRAMEWORK THAT SUPPORTS VALUE CREATION AND SHAREHOLDER REMUNERATION



- 1 DIVIDEND**  
Committed to a strong and progressive dividend
- 2 SUSTAINING & GROWTH CAPEX**  
Capital investments to sustain and expand our assets
- 3 INORGANIC INVESTMENTS & SHARE REPURCHASES**  
Value-minded inorganic growth  
Return surplus cash through share repurchases

Committed to Strong Investment Grade Rating

# FOCUSED COST DISCIPLINE

HIGH PRODUCTIVITY DRIVING OUR LEADING COST STRUCTURE

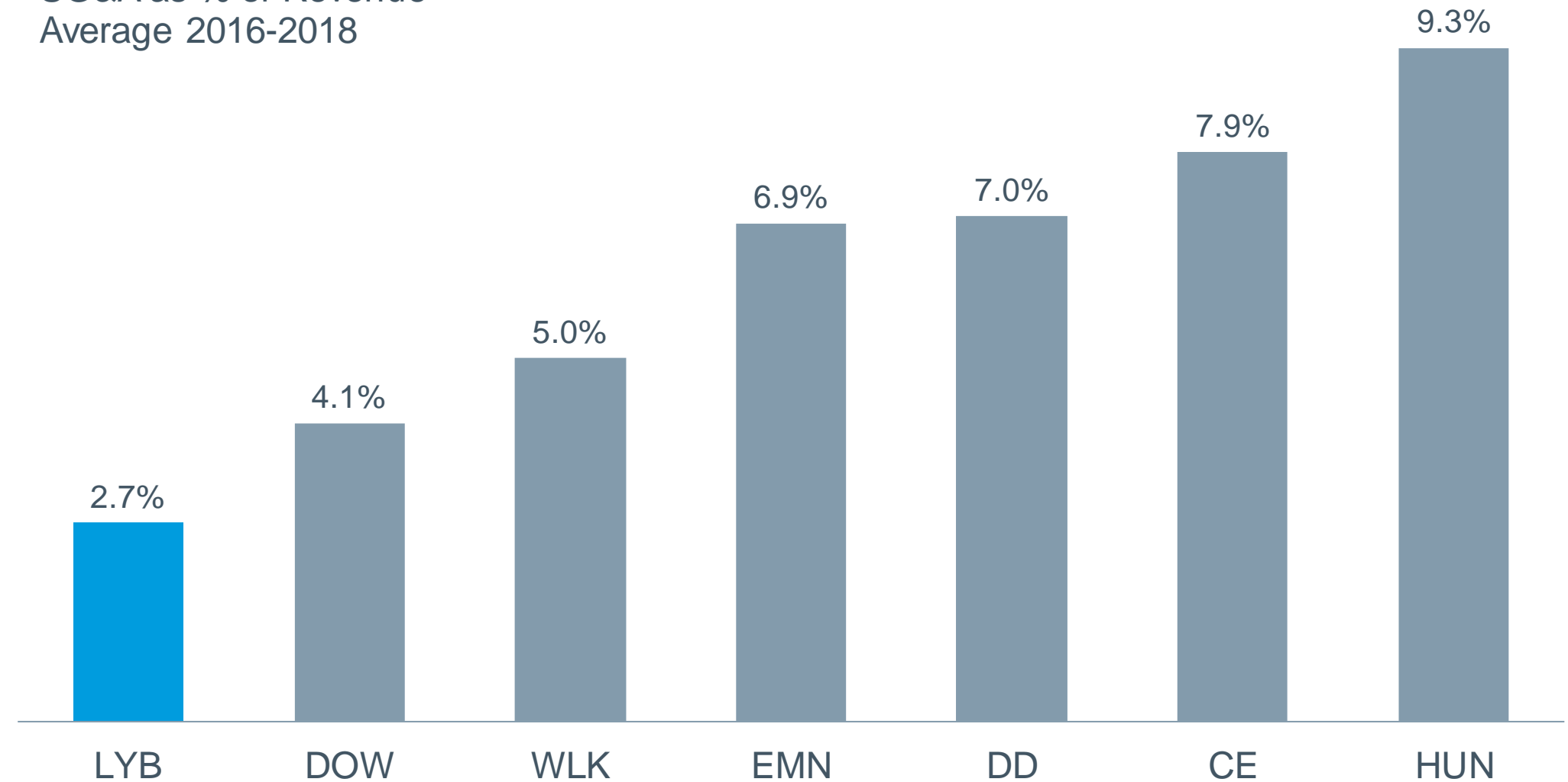
## COST-FOCUSED CULTURE

- Relentless peer benchmarking
- Continuous pursuit of first-quartile performance

## HIGHLY TARGETED CUSTOMER SUPPORT

- Focus on initiatives valued by customers
- Rigorous management of technical resources

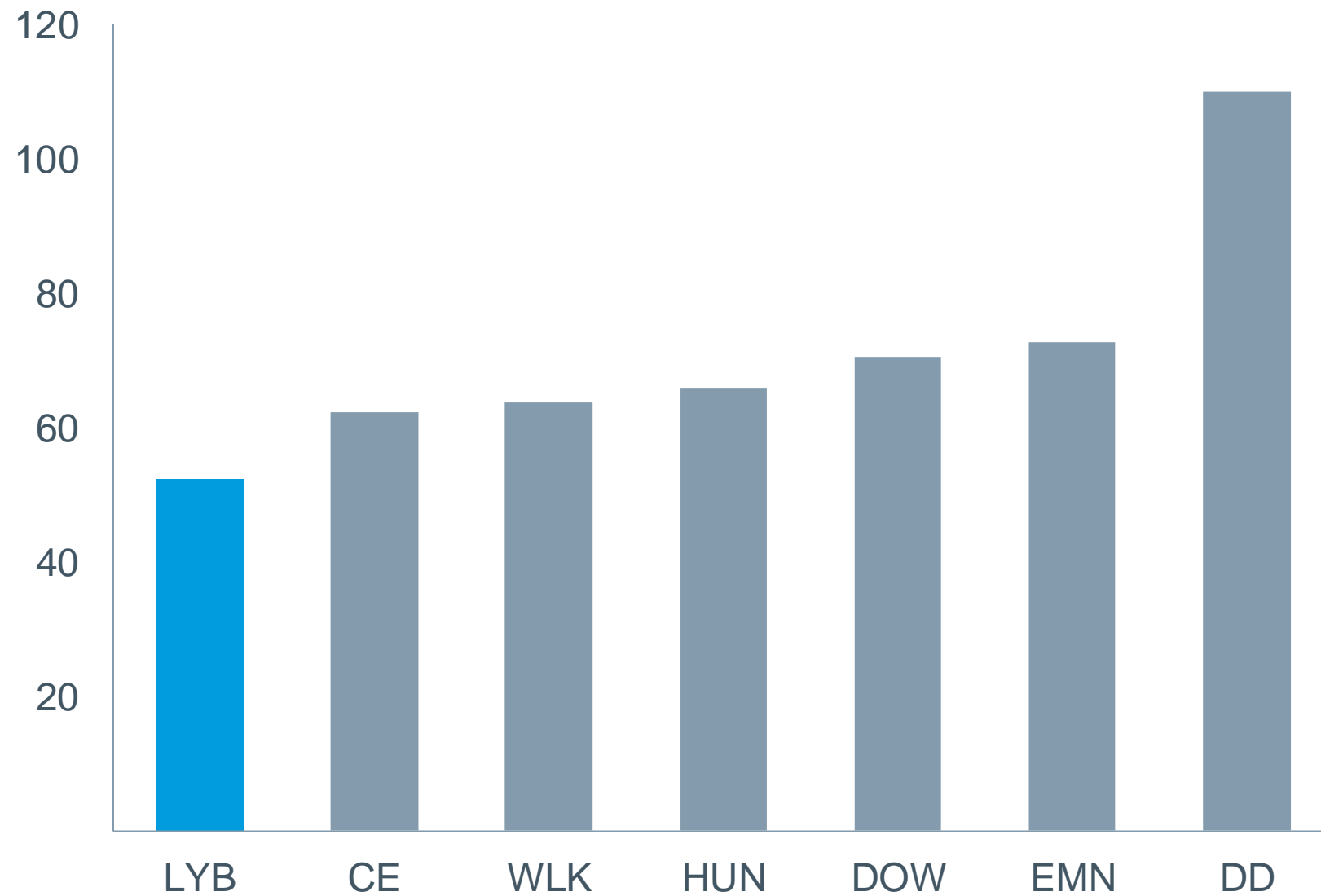
SG&A as % of Revenue  
Average 2016-2018



# INDUSTRY LEADING CASH METRICS

EXCEEDING OUR PEERS IN CASH CONVERSION

Cash Conversion Cycle (Days)  
2016-2018 Average



**53 Days**

CASH CONVERSION CYCLE  
2016-2018 Average



**17% ETR**

EFFECTIVE TAX RATE  
2019 Forecast



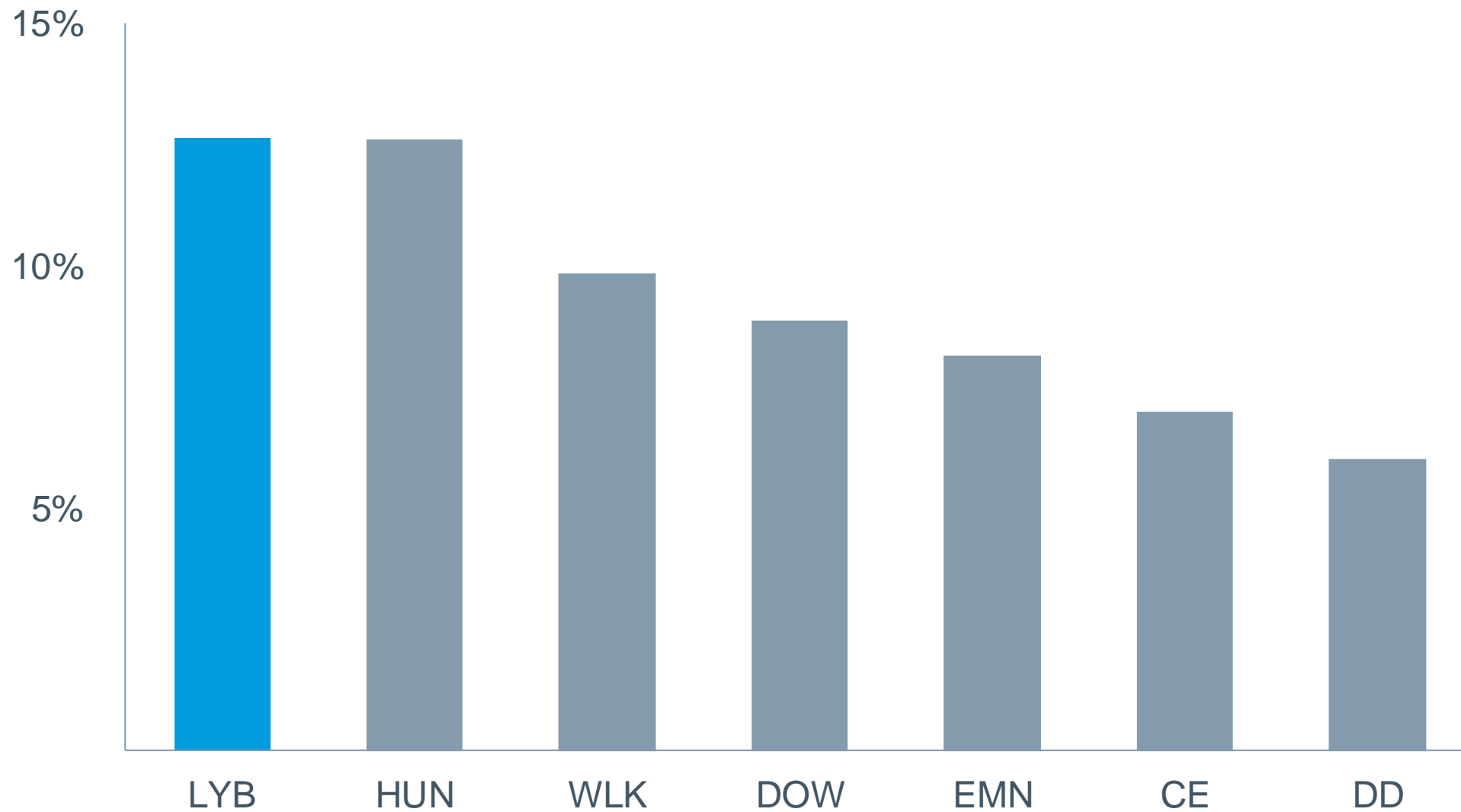
**80% Yield**

CASH FROM OPERATING ACTIVITIES / EBITDA  
2016-2018 Average

# LEADING CASH GENERATION

STRONG AND CONSISTENT CASH GENERATION IS OUR SPECIALTY

Cash from Operating Activities / Average EV  
2016-2018



## CASH GENERATION NORMALIZED FOR SIZE

- Leading the peer group

## STABLE PERFORMANCE OVER TIME

- 2014-2018 range of 11.4% to 14.1%

# INCREASING CASH FLOW PROFILE

INCREASED EBITDA AND CAPEX REDUCTIONS ENHANCE FREE CASH FLOW IN 2022 OVER 2019

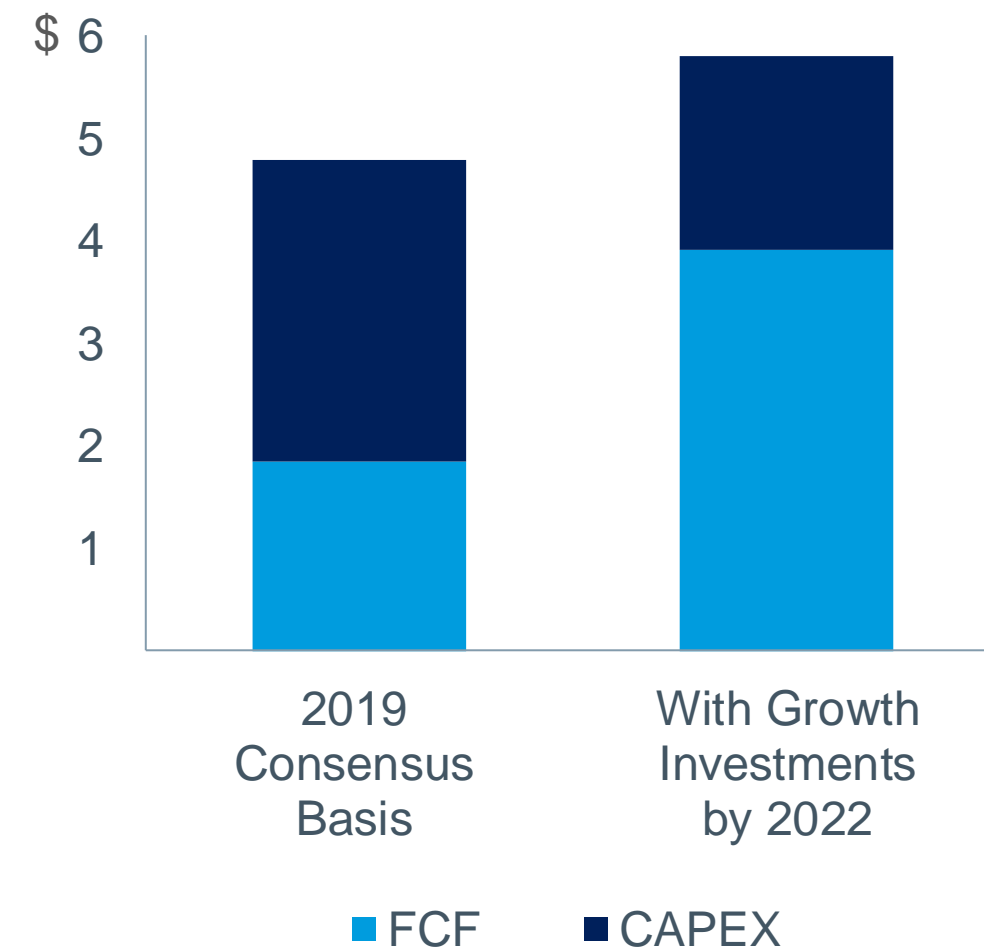
## HIGHER FREE CASH FLOW

- Focused high-return organic and inorganic investments driving EBITDA growth
- 80% historical average Cash from Operating Activities / EBITDA yield
- Reduced CAPEX

## EXCLUDES EFFECTS OF UNDERLYING BUSINESS PERFORMANCE

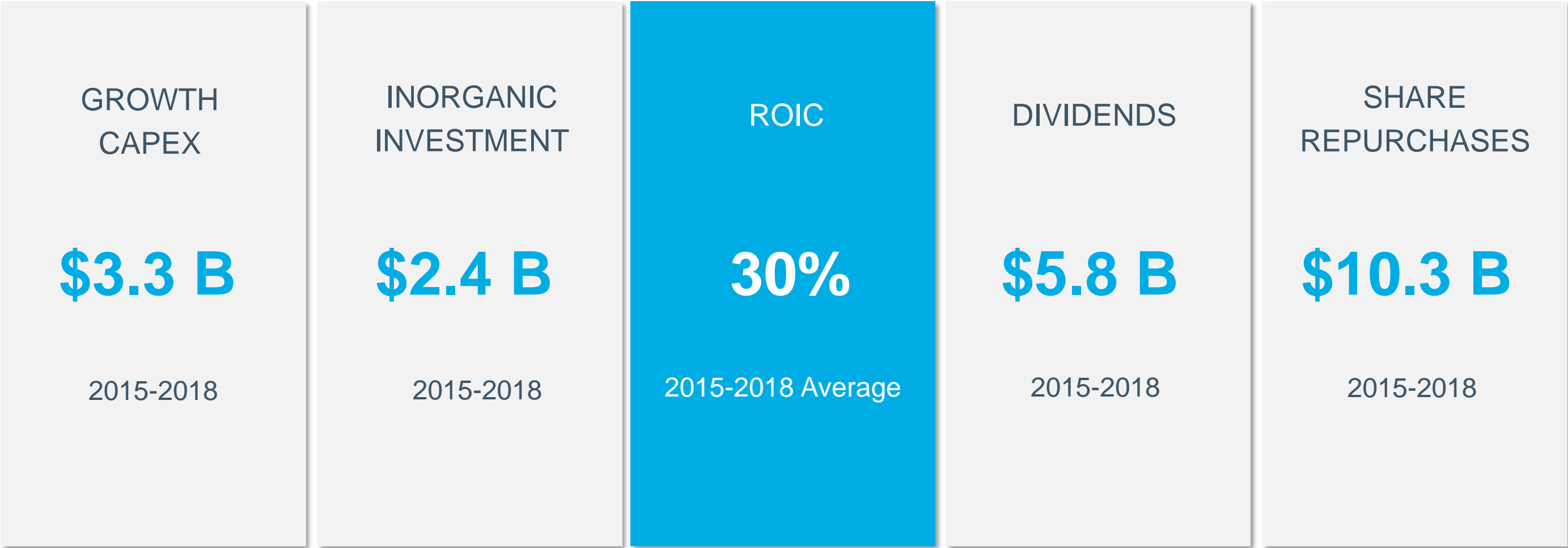
- Potential upside from refining markets
- Market dynamics may provide headwinds or tailwinds

Estimated  
Cash from Operating Activities  
USD, billions



# CONSISTENT AND **DISCIPLINED** CAPITAL DEPLOYMENT

TRACK RECORD OF STRONG RETURN ON INVESTMENT AND SHAREHOLDER RETURNS

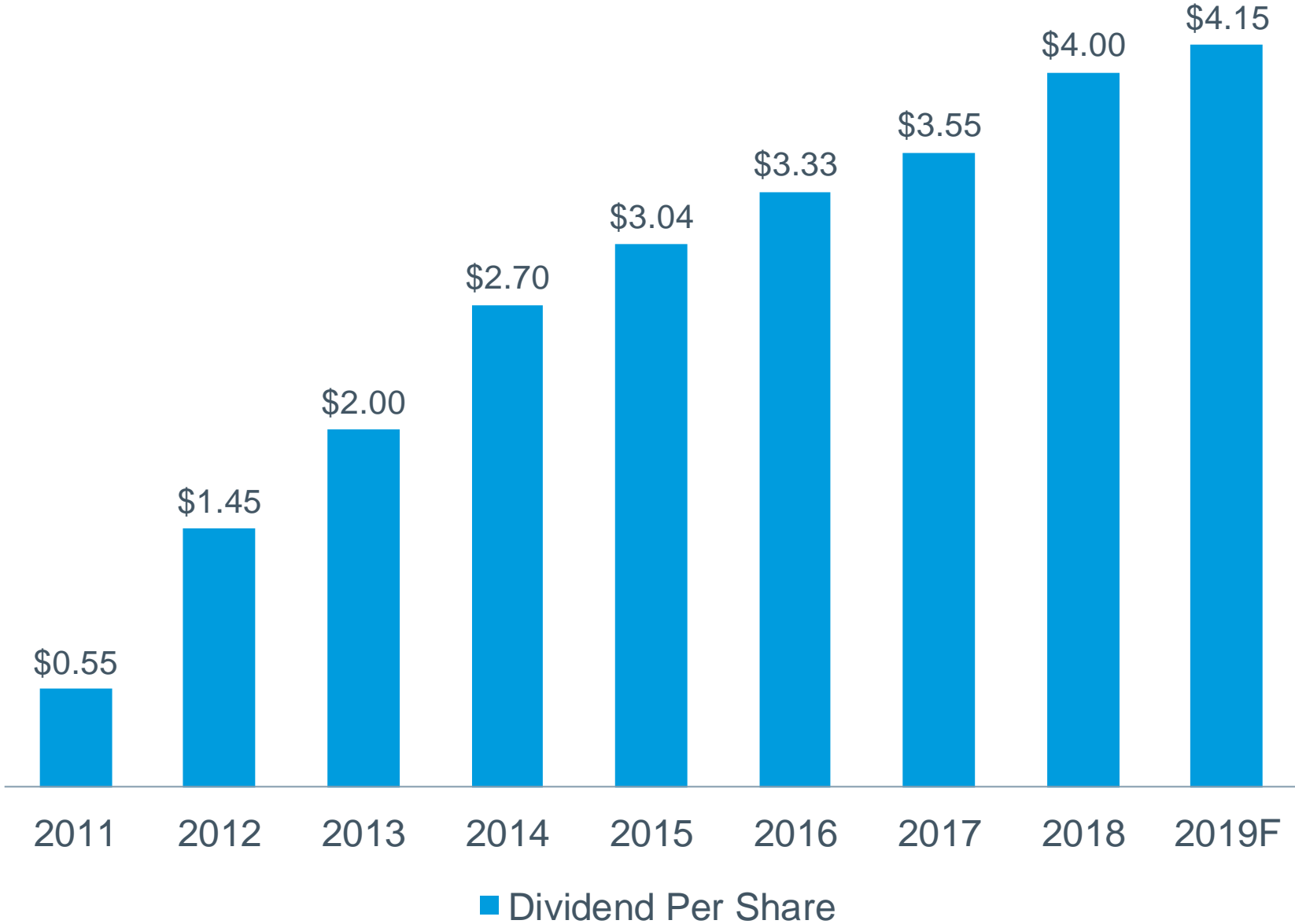
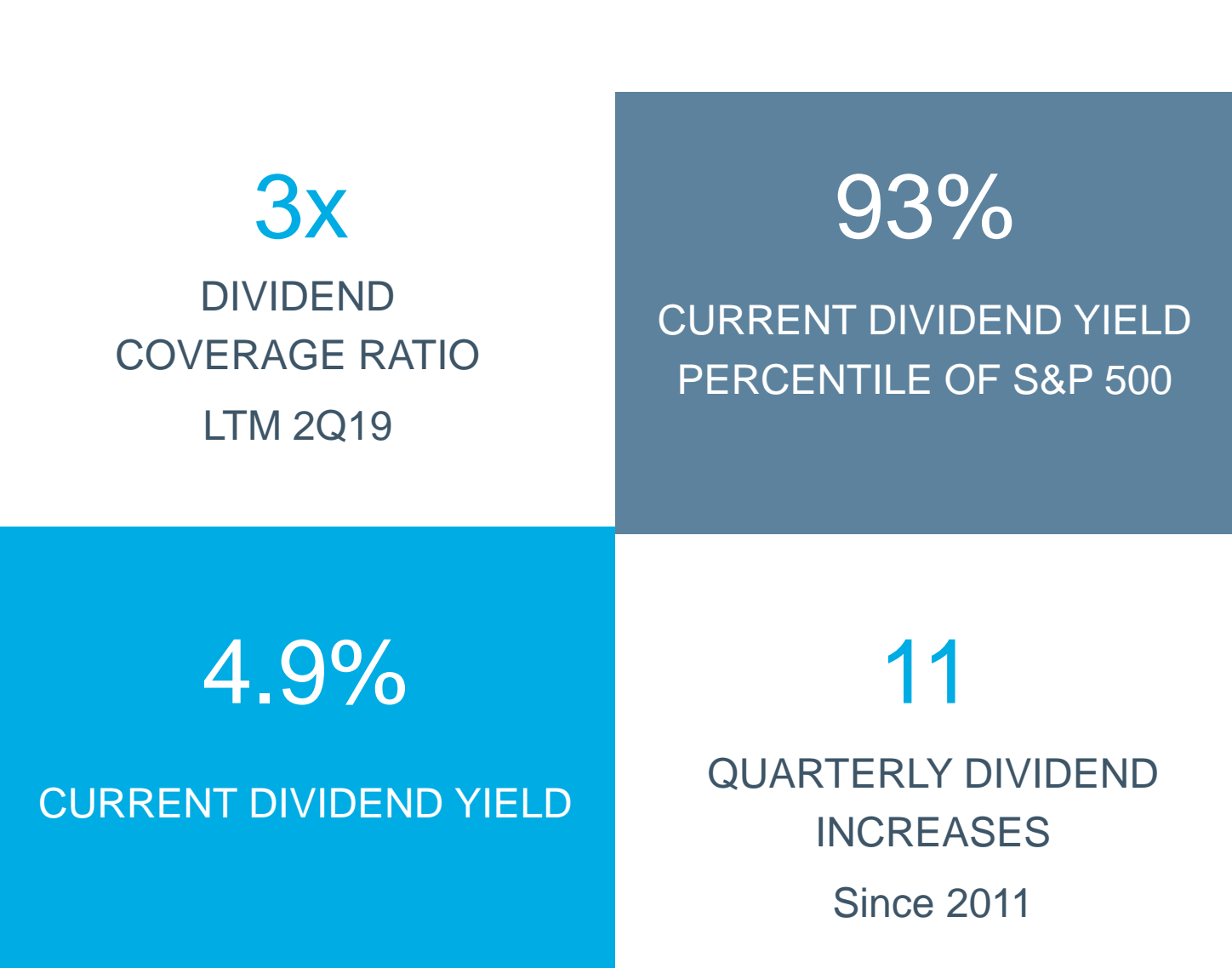


Note: Inorganic investment of \$2.4 billion is the total enterprise value for A. Schulman which includes the debt assumed.



# SECURE AND PROGRESSIVE DIVIDEND

COMMITTED TO A CONSISTENT AND GROWING DIVIDEND



Note: Dividend coverage ratio is dividends paid divided by cash from operating activities. Current dividend yield is as of September 13, 2019. Dividend per share does not include special dividends.

# STRONG BALANCE SHEET

DEMONSTRATING PRUDENT FINANCIAL MANAGEMENT

TOTAL LIQUIDITY

**\$6.1 B**

Ample total liquidity supported by  
our core credit facilities

CREDIT RATING

**BBB+/Baa1**

One of the strongest credit ratings  
in our peer group

TARGET  
TOTAL DEBT / EBITDA

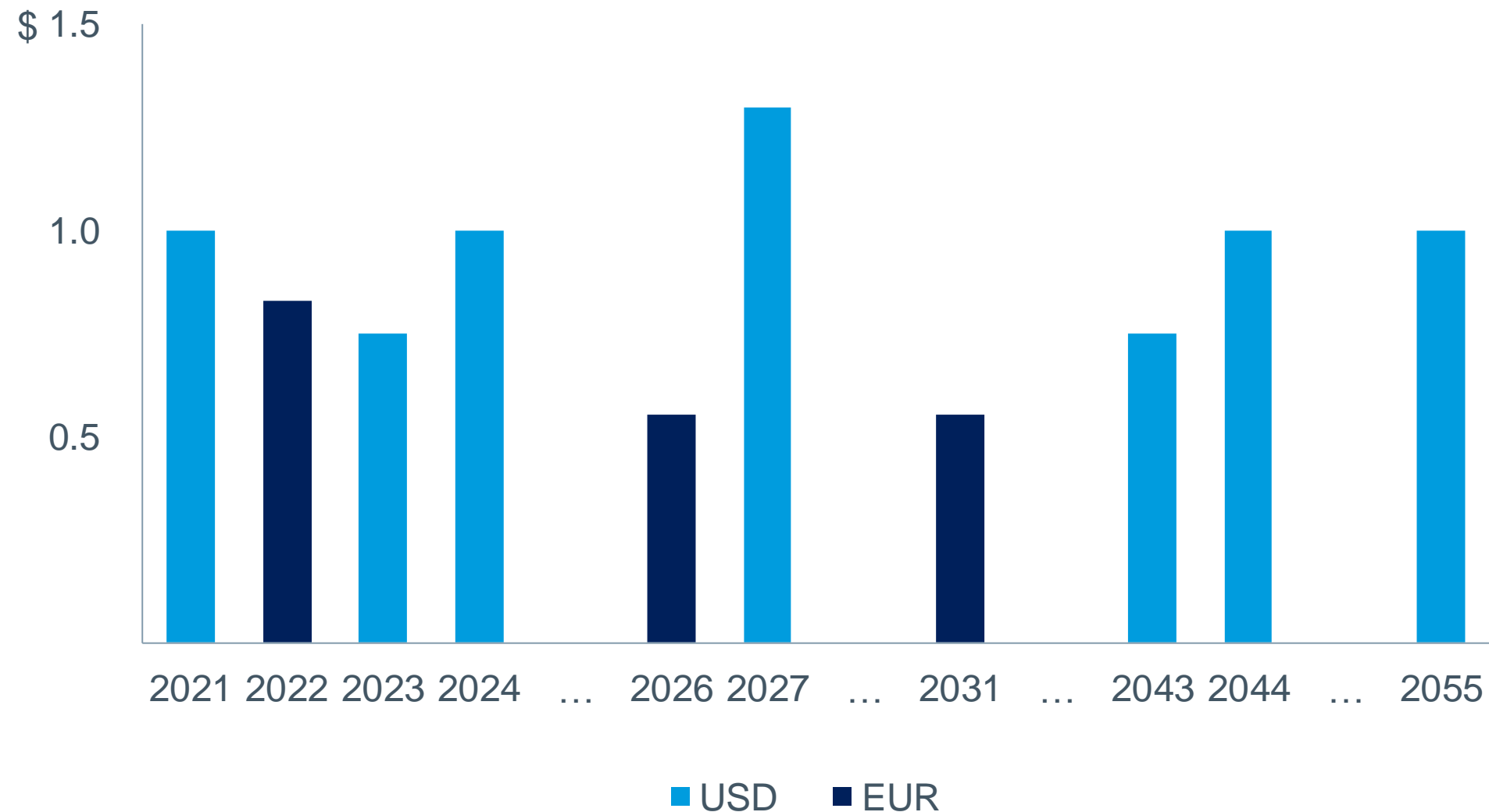
**1.5x - 2.5x**

Manage debt capacity  
throughout the cycle

# BALANCED MATURITY PROFILE

THOUGHTFUL APPROACH THAT MINIMIZES FINANCIAL RISK

Long-Term Debt  
USD, billions



## 1 STRATEGICALLY MANAGED DEBT MATURITIES

Maturities allow for efficient refinancing

## 2 DISCIPLINED INTEREST RATE RISK MANAGEMENT

Hedges for cross-currency swaps, fixed-to-floating rates and future refinancing rates

## 3 EFFICIENT FINANCING OPTIONS

Strong investment grade rating provides optionality

# LEADING PORTFOLIO OF FOCUSED BUSINESSES



## INTEGRATED POLYMERS

**EBITDA: \$3.5 B**

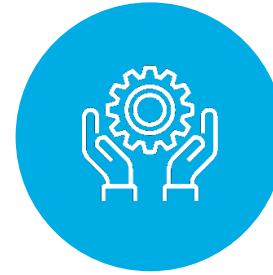
Olefins  
Polyethylene  
Polypropylene

**EBITDA MARGIN: 23%**

### PEERS

Dow, Westlake

**PEER MULTIPLE: 7.2x**



## TECHNOLOGY ENABLED PRODUCTS

**EBITDA: \$1.4 B**

Technology  
Advanced Polymer Solutions  
Propylene Oxide & Derivatives

**EBITDA MARGIN: 19%**

### PEERS

Celanese, Eastman, Grace, PolyOne

**PEER MULTIPLE: 9.4x**



## INTERMEDIATES & FUELS

**EBITDA: \$1.0 B**

Intermediate Chemicals  
Oxyfuels & Related Products  
Refining

**EBITDA MARGIN: 7%**

### PEERS

Celanese, Methanex, Trinseo, Valero

**PEER MULTIPLE: 7.3x**

**LYONDELLBASELL MULTIPLE: 6.3x**

# DELIVERING VALUE THROUGH DISCIPLINED CAPITAL ALLOCATION



## LEADING CASH FLOW


Leading cost structure,  
cash flow generation  
and cash conversion

## PRUDENT FISCAL MANAGEMENT

Solid balance sheet with one  
of the strongest credit ratings  
in our industry

## DISCIPLINED CAPITAL ALLOCATION

Balanced strategy that provides  
for both tangible growth and  
shareholder remuneration



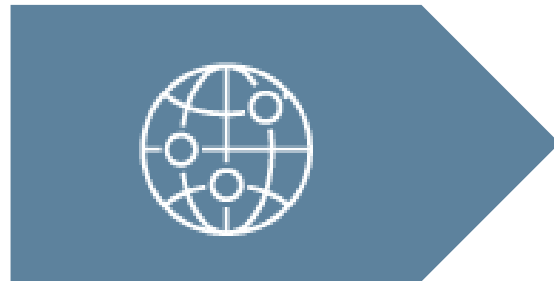
# INVESTOR DAY 2019

September 24, 2019



**lyondellbasell**  
*Advancing Possible*

# LEADING + ADVANTAGED + DISCIPLINED



**LEADING** global portfolio of proven, flexible and focused businesses in large and growing markets



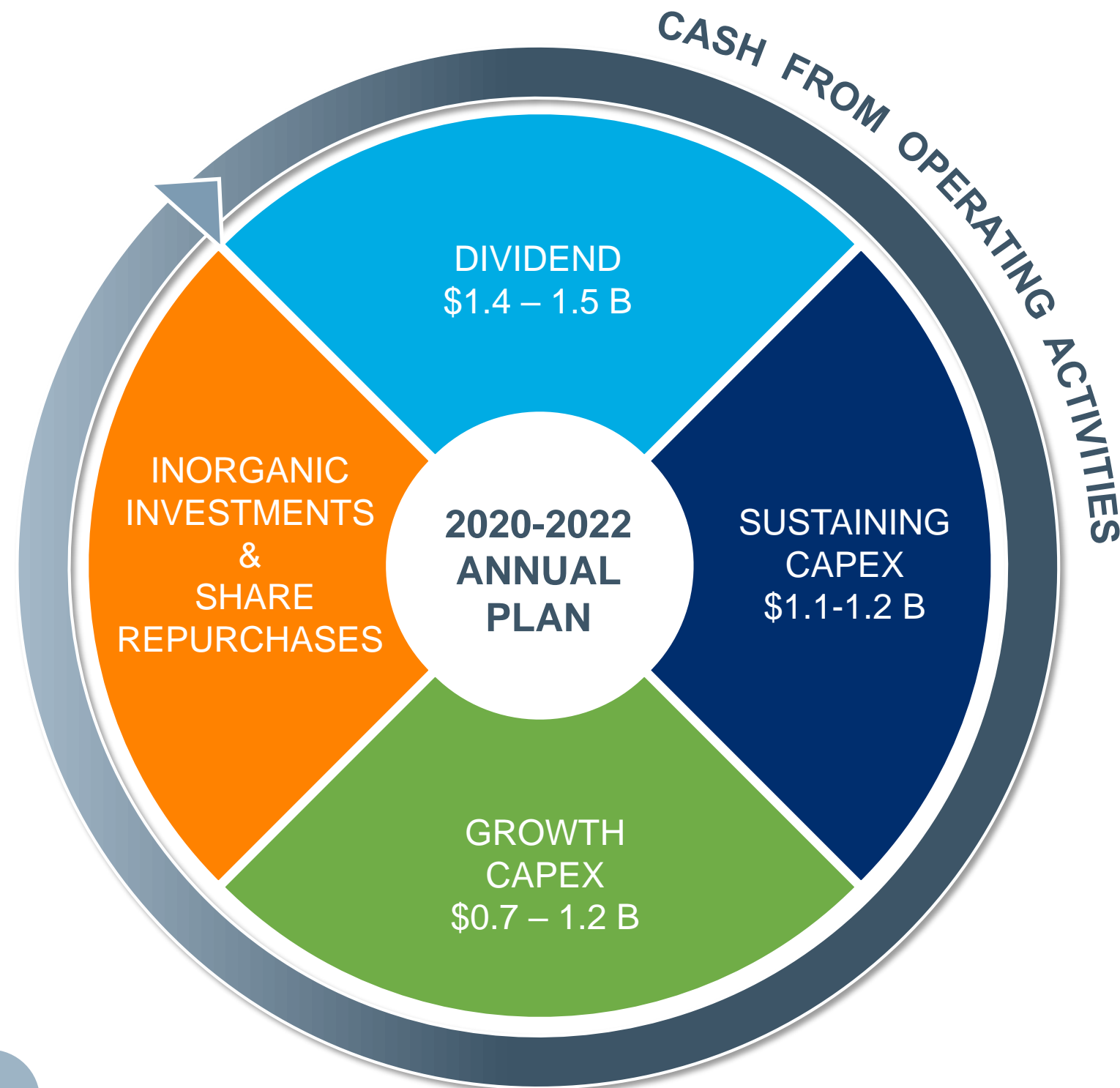
**ADVANTAGED** global position as the industry's best operator with expertise and innovation



**DISCIPLINED** capital allocation that supports value-driven growth

# DISCIPLINED CAPITAL ALLOCATION

CLEAR FRAMEWORK THAT SUPPORTS VALUE CREATION AND SHAREHOLDER REMUNERATION



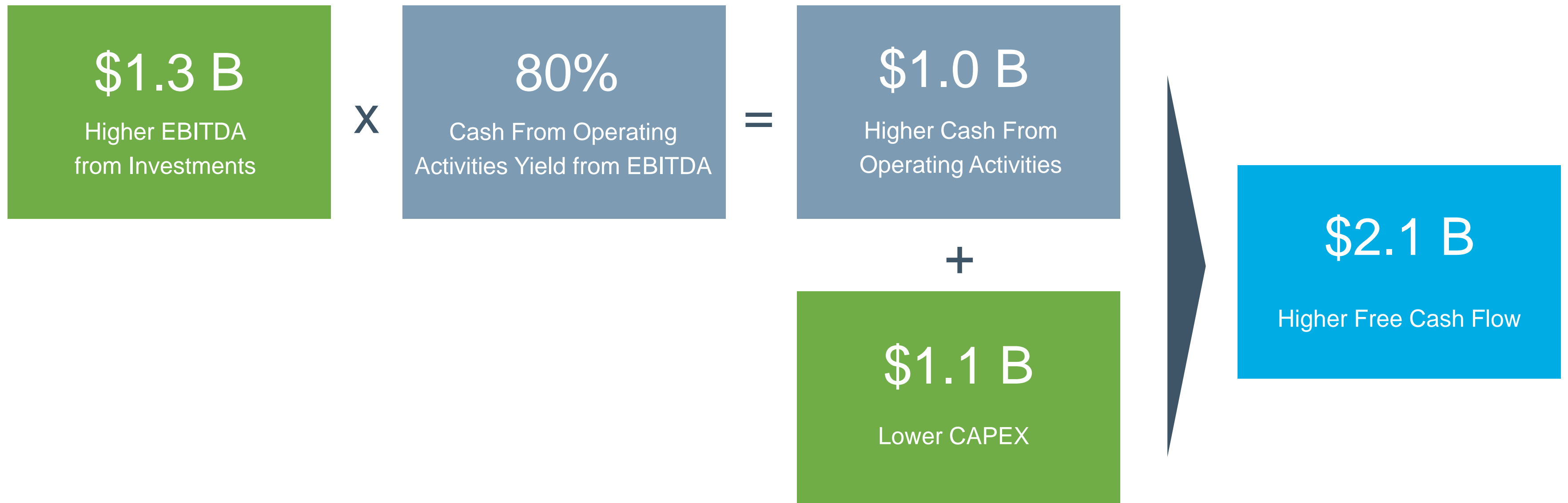
- 1 DIVIDEND**  
Committed to a strong and progressive dividend
- 2 SUSTAINING & GROWTH CAPEX**  
Capital investments to sustain and expand our assets
- 3 INORGANIC INVESTMENTS & SHARE REPURCHASES**  
Value-minded inorganic growth  
Return surplus cash through share repurchases

Committed to Strong Investment Grade Rating



# DELIVERING HIGHER FREE CASH FLOW

HIGHER EBITDA AND LOWER CAPEX INCREASE FREE CASH FLOW IN 2022 OVER 2019



# LEADING + ADVANTAGED + DISCIPLINED

WELL-POSITIONED TO ENHANCE VALUE CREATION

## RESILIENT FOCUSED PORTFOLIO

Integrated Polymers

Technology Enabled Products

Intermediates & Fuels

## LEADING ADVANTAGED POSITIONS

Best Operator

Attractive Products/Markets

Feedstock Advantages

Culture of Innovation

## DISCIPLINED FINANCIAL POLICIES

Efficient Cash Generation

Secure, Progressive Dividend

Committed to Strong  
Investment Grade

## TANGIBLE GROWTH AHEAD

Small-Medium Projects

Major Projects

Joint Ventures

Selective M&A

# QUESTIONS

# APPENDIX

# 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. 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 certain liquidity measures 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. Estimated EBITDA, as presented for future projects is calculated as volume multiplied by average historical margins. Estimated EBITDA cannot be reconciled to net income due to the inherent difficulty in forecasting and quantifying certain amounts that are necessary for such reconciliation, including adjustments that could be made for interest expense (net), provision for (benefit from) income taxes, depreciation & amortization and other changes reflected in the reconciliation of historical numbers, the amounts of which, based on historical experience, could be significant.

Total liquidity, total debt to EBITDA and EBITDA margin are measures commonly used by investors to gauge the company's liquidity position and overall financial health. Total liquidity, the ratio of total debt to EBITDA and EBITDA margin 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, total liquidity includes cash and cash equivalents, restricted cash and restricted cash equivalents, short term investments, repurchase agreements, and availability under our Three-Year Team Loan due 2022, Senior Revolving Credit Facility and our receivables facilities. The ratio of total debt to EBITDA is the sum of long term debt and short term debt divided by EBITDA. EBITDA margin means EBITDA divided by total revenue.

Cash conversion cycle and cash from operations yield from EBITDA are measures that provide an indicator of a company's operational efficiency and management. Cash conversion cycle and cash from operations yield from EBITDA, 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, cash conversion cycle means days of sales outstanding plus days of inventory outstanding minus days of payables outstanding. Days outstanding for each means the average value of sales, inventory or payables divided by cost of goods sold. Cash from operating activities yield from EBITDA means cash from operating activities divided by EBITDA.

Free cash flow and free operating cash flow yield (FOCF Yield) are measures of profitability commonly used by investors to evaluate performance. Free cash flow and free operating cash flow yield, 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. Free operating cash flow yield means the ratio of free operating cash flow to market capitalization where free operating cash flow means net cash provided by operating activities minus sustaining (maintenance and HSE) capital expenditures.

## Reconciliation of Net Income to EBITDA

In Millions of Dollars	For the Years Ended December 31,					Six Months Ended		Last Twelve Months Ended
	2014	2015	2016	2017	2018	June 30, 2018	June 30, 2019	June 30, 2019
	Net income	\$ 4,168	\$ 4,474	\$ 3,837	\$ 4,877	\$ 4,690	\$ 2,885	\$ 1,820
Loss from discontinued operations	4	5	10	18	8	1	3	10
Income from continuing operations	4,172	4,479	3,847	4,895	4,698	2,886	1,823	3,635
Provision for income taxes	1,540	1,730	1,386	598	613	282	372	703
Depreciation and amortization	1,019	1,047	1,064	1,174	1,241	599	650	1,292
Interest expense, net	319	277	305	467	315	156	162	321
EBITDA	<u>\$ 7,050</u>	<u>\$ 7,533</u>	<u>\$ 6,602</u>	<u>\$ 7,134</u>	<u>\$ 6,867</u>	<u>\$ 3,923</u>	<u>\$ 3,007</u>	<u>\$ 5,951</u>

Note: Last twelve months June 30, 2019 is calculated as year ended December 31, 2018 plus six months ended June 30, 2019 and minus six months ended June 30, 2018.

## Cash from Operating Activities Yield from EBITDA

<u>In Millions of Dollars</u>	<u>For the Years Ended December 31,</u>		
	<u>2016</u>	<u>2017</u>	<u>2018</u>
Cash flows from operating activities	\$ 5,606	\$ 5,206	\$ 5,471
EBITDA	6,602	7,134	6,867
Cash from operating activities yield from EBITDA	85%	73%	80%
Approximate average (2016-2018)			80%

## EBITDA by Reporting Segments

	EBITDA by Reporting Segment			
	For the Year	Six Months Ended		Last Twelve
	Ended	June 30, 2018		Months
	December 31, 2018	June 30, 2018	June 30, 2019	Ended June 30, 2019
<b>In Millions of dollars</b>				
Olefins & Polyolefins - Americas	\$ 2,762	\$ 1,427	\$ 1,151	\$ 2,486
Olefins & Polyolefins - EAI	1,163	774	627	1,016
Intermediates & Derivatives	2,011	1,128	838	1,721
Advanced Polymer Solutions	400	244	268	424
Refining	167	167	(81)	(81)
Technology	328	169	190	349
Other	36	14	14	36
Continuing Operations	<u>\$ 6,867</u>	<u>\$ 3,923</u>	<u>\$ 3,007</u>	<u>\$ 5,951</u>



**EBITDA by Reporting Segment to EBITDA by Platform - Last Twelve Months Ended June 30, 2019**

<u>In Billions of dollars</u>	EBITDA by Reporting Segment				EBITDA by Platform				
	For the Year Ended	Six Months Ended		Last Twelve Months Ended	Last Twelve Months Ended				
		December 31, 2018	June 30, 2018	June 30, 2019	June 30, 2019				
					Integrated Polymers	Technology Enabled Products	Intermediates & Fuels	Other Segment	Total Continuing Operations
Olefins & Polyolefins - Americas	\$ 2.8	\$ 1.4	\$ 1.1	\$ 2.5	\$ 2.5				\$ 2.5
Olefins & Polyolefins - EAI	1.2	0.8	0.6	1.0	1.0				1.0
Intermediates & Derivatives: (a)	2.0	1.1	0.8	1.7					1.7
<i>Intermediates &amp; Derivatives - PO &amp; Derivatives (a)</i>	0.7	0.4	0.3	0.6		0.6			0.6
<i>Intermediates &amp; Derivatives - Intermediate Chemicals, Oxyfuels &amp; Related Products (a)</i>	1.3	0.7	0.5	1.1			1.1		1.1
Advanced Polymer Solutions	0.4	0.2	0.3	0.5		0.5			0.5
Refining	0.2	0.2	(0.1)	(0.1)			(0.1)		(0.1)
Technology	0.3	0.2	0.2	0.3		0.3			0.3
Other	-	-	0.1	0.1				0.1	0.1
Continuing Operations	<u>6.9</u>	<u>3.9</u>	<u>3.0</u>	<u>6.0</u>	<u>\$ 3.5</u>	<u>\$ 1.4</u>	<u>\$ 1.0</u>	<u>\$ 0.1</u>	<u>\$ 6.0</u>

(a) In the Platform analysis, Intermediates & Derivatives Segment is divided by PO & Derivatives product line and Intermediate Chemicals, Oxyfuels and Related Products product lines.

**EBITDA by Reporting Segment to EBITDA by Platform - For the Year Ended December 31, 2018**

<u>In Billions of dollars</u>	EBITDA by Reporting Segment		EBITDA by Platform				
	For the Year Ended		For the Year Ended				
	December 31, 2018		December 31, 2018				
		Integrated Polymers	Technology Enabled Products	Intermediates & Fuels	Other Segment	Total Continuing Operations	
Olefins & Polyolefins - Americas	\$ 2.8	\$ 2.8				\$ 2.8	
Olefins & Polyolefins - EAI	1.2	1.2				1.2	
Intermediates & Derivatives: (a)	2.0					2.0	
<i>Intermediates &amp; Derivatives - PO &amp; Derivatives (a)</i>	<i>0.7</i>			<i>0.7</i>		<i>0.7</i>	
<i>Intermediates &amp; Derivatives - Intermediate Chemicals, Oxyfuels &amp; Related Products (a)</i>	<i>1.3</i>				<i>1.3</i>	<i>1.3</i>	
Advanced Polymer Solutions	0.4		0.4			0.4	
Refining	0.2			0.2		0.2	
Technology	0.3		0.3			0.3	
Other	-				-	-	
Continuing Operations	<u>\$ 6.9</u>	<u>\$ 4.0</u>	<u>\$ 1.4</u>	<u>\$ 1.5</u>	<u>\$ -</u>	<u>\$ 6.9</u>	

(a) In the Platform analysis, Intermediates & Derivatives Segment is divided by PO & Derivatives product line and Intermediate Chemicals, Oxyfuels and Related Products product lines.

**EBITDA by Reporting Segment to EBITDA by Platform - For the Year Ended December 31, 2017**

<u>In Billions of dollars</u>	EBITDA by Reporting Segment		EBITDA by Platform			
	For the Year Ended		For the Year Ended			
	December 31, 2017		December 31, 2017			
		Integrated Polymers	Technology Enabled Products	Intermediates & Fuels	Other Segment	Total Continuing Operations
Olefins & Polyolefins - Americas	\$ 2.9	\$ 2.9				\$ 2.9
Olefins & Polyolefins - EAI	1.9	1.9				1.9
Intermediates & Derivatives: (a)	1.5					1.5
<i>Intermediates &amp; Derivatives - PO &amp; Derivatives (a)</i>	0.7		0.7			0.7
<i>Intermediates &amp; Derivatives - Intermediate Chemicals, Oxyfuels &amp; Related Products (a)</i>	0.8			0.8		0.8
Advanced Polymer Solutions	0.4		0.4			0.4
Refining	0.2			0.2		0.2
Technology	0.2		0.2			0.2
Other	-				-	-
Continuing Operations	<u>\$ 7.1</u>	<u>\$ 4.8</u>	<u>\$ 1.3</u>	<u>\$ 1.0</u>	<u>\$ -</u>	<u>\$ 7.1</u>

(a) In the Platform analysis, Intermediates & Derivatives Segment is divided by PO & Derivatives product line and Intermediate Chemicals, Oxyfuels and Related Products product lines.

**EBITDA by Reporting Segment to EBITDA by Platform - For the Year Ended December 31, 2016**

	EBITDA by Reporting Segment		EBITDA by Platform				
	For the Year Ended		For the Year Ended				
	December 31, 2016		December 31, 2016				
		Integrated Polymers	Technology Enabled Products	Intermediates & Fuels	Other Segment	Total Continuing Operations	
<b>In Billions of dollars</b>							
Olefins & Polyolefins - Americas	\$ 2.8	\$ 2.8				\$ 2.8	
Olefins & Polyolefins - EAI	1.7	1.7				1.7	
Intermediates & Derivatives: (a)	1.3					1.3	
<i>Intermediates &amp; Derivatives - PO &amp; Derivatives (a)</i>	0.4		0.4			0.4	
<i>Intermediates &amp; Derivatives - Intermediate Chemicals, Oxyfuels &amp; Related Products (a)</i>	0.9			0.9		0.9	
Advanced Polymer Solutions	0.4		0.4			0.4	
Refining	0.1			0.1		0.1	
Technology	0.3		0.3			0.3	
Other	-				-	-	
Continuing Operations	<u>\$ 6.6</u>	<u>\$ 4.5</u>	<u>\$ 1.1</u>	<u>\$ 1.0</u>	<u>\$ -</u>	<u>\$ 6.6</u>	

(a) In the Platform analysis, Intermediates & Derivatives Segment is divided by PO & Derivatives product line and Intermediate Chemicals, Oxyfuels and Related Products product lines.

## EBITDA by Reporting Segments to EBITDA by Platform - Integrated Polymers

	For the Quarter Ended					
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019
<b>In Millions of dollars</b>						
Olefins & Polyolefins - Americas	\$ 756	\$ 671	\$ 704	\$ 631	\$ 516	\$ 635
Olefins & Polyolefins - EAI	419	355	262	127	296	331
Platform - Integrated Polymers	<u>\$ 1,175</u>	<u>\$ 1,026</u>	<u>\$ 966</u>	<u>\$ 758</u>	<u>\$ 812</u>	<u>\$ 966</u>

## Calculation of Free Operating Cash Flow Yield

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	<u>Last Twelve Months</u>
	<u>June 30, 2019</u>
<b><u>In Millions of Dollars (except share data)</u></b>	
Net cash provided by operating activities	\$ 4,581
Less:	
Sustaining (maintenance and HSE) capital expenditures	1,000
Free operating cash flow	<u>\$ 3,581</u>
 Divided by:	
 Market capital:	
Common stock outstanding	370,387,374
Closing share price, end of period	<u>\$ 86.13</u>
Market capital	\$ 31,901
 Free operating cash flow yield	 <u>11%</u>

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## Cash Conversion Cycle

<u>In Millions of Dollars</u>	December 31,			
	2015	2016	2017	2018
<b>Days Inventory Outstanding:</b>				
Inventory	\$ 4,051	\$ 3,809	\$ 4,217	\$ 4,515
Average Inventory		3,930	4,013	4,366
Cost of Goods Sold		23,191	28,059	32,529
Days		365	365	365
Days Inventory Outstanding		62	52	49
<b>Days Sales Outstanding:</b>				
Accounts Receivable	\$ 2,363	\$ 2,716	\$ 3,359	\$ 3,355
Average Trade Accounts Receivable		2,540	3,038	3,357
Trade Revenue		28,454	33,705	38,126
Days		365	365	365
Days Sales Outstanding		33	33	32
<b>Days Payable Outstanding:</b>				
Accounts Payable	\$ 2,182	\$ 2,529	\$ 2,895	\$ 3,087
Average Accounts Payable		2,356	2,712	2,991
Cost of Goods Sold		23,191	28,059	32,529
Days		365	365	365
Days Payable Outstanding		37	35	34
Cash Conversion Cycle (in Days)		57	50	48
Approximate Average Cash Conversion Cycle (2016-2018) (in Days)				53

## Schedule of Spending for Dividends and Share Repurchases

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<b>In Millions of Dollars</b>	<b>December 31,</b>				<b>Total</b>
	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	
Dividend paid - common stock	\$ 1,410	\$ 1,395	\$ 1,415	\$ 1,554	\$ 5,774
Repurchases of ordinary shares	4,656	2,938	866	1,854	10,314
Total	\$ 6,066	\$ 4,333	\$ 2,281	\$ 3,408	\$ 16,088

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## Components of Cash and Liquid Investments and Total Liquidity

<u>In Millions of dollars</u>	<u>August 31, 2019</u>
Cash and cash equivalents and restricted cash	\$ 744
Short-term investments	52
Repurchase agreements	524
Cash and liquid investments	1,320
Availability under Three-Year Term Loan	3,000
Availability under Senior Revolving Credit Facility	1,471
Availability under U.S. Receivables Facility	288
Total liquidity	\$ 6,079

## Calculation of Selling, general and administrative expenses (SG&A) as a percent of revenue

<u>In Millions of Dollars</u>	December 31,			Average
	2016	2017	2018	(2016-2018)
SG&A	\$ 833	\$ 859	\$ 1,129	\$ 940
Revenue	29,183	34,484	39,004	34,224
SG&A as a percentage of revenue				2.7%

## Calculation of Dividend Coverage Ratio

<b>In Millions of Dollars</b>	<b>December 31,</b>	<b>Six Months Ended</b>		<b>Last Twelve</b>
	<b>2018</b>	<b>June 30,</b>	<b>June 30,</b>	<b>Months</b>
		<b>2018</b>	<b>2019</b>	<b>Ended</b>
				<b>June 30,</b>
				<b>2019</b>
Cash flows from operating activities	\$ 5,471	\$ 2,733	\$ 1,843	\$ 4,581
Dividends paid - common stock	1,554	787	760	1,527
Dividend Coverage Ratio				3

## Calculation of LYB Return on Invested Capital (ROIC)

In Million of Dollars	For the Years Ended December 31,				
	2014	2015	2016	2017	2018
Income from continuing operations		\$ 4,479	\$ 3,847	\$ 4,895	\$ 4,698
Less:					
Tax benefit due to change in tax law from U.S. Tax Cuts and Jobs Act				819	
Non-cash tax settlement (2Q18)					346
Add:					
Interest expense, net		277	305	467	315
Effective tax rate (excluding tax benefits)		27.9%	26.5%	25.8%	18%
Interest expense, net, after tax		200	224	347	258
Adjusted income from continuing operations		4,679	4,071	4,423	4,610
Divided by:					
Average invested capital:					
Property, plant & equipment, net	8,758	8,991	10,137	10,997	12,477
Current assets	11,645	9,789	9,599	11,738	10,566
Less:					
Current liabilities	5,437	4,349	4,540	4,777	5,513
Cash and cash equivalents	1,031	924	875	1,523	332
	13,935	13,507	14,321	16,435	17,198
Average invested capital		\$ 13,721	\$ 13,914	\$ 15,378	\$ 16,817
Return on invested capital		34%	29%	29%	27%
Average (2015-2018)					30%

## Calculation of Capital Expenditures

<u>In Millions of Dollars</u>	December 31,					
	2013	2014	2015	2016	2017	2018
Sustaining CAPEX	\$ 825	\$ 706	\$ 815	\$ 1,109	\$ 1,019	\$ 1,052
Growth CAPEX	736	793	625	1,134	528	1,053
Expenditures for property, plant and equipment	<u>\$ 1,561</u>	<u>\$ 1,499</u>	<u>\$ 1,440</u>	<u>\$ 2,243</u>	<u>\$ 1,547</u>	<u>\$ 2,105</u>
Average Sustaining CAPEX (2013-2017)					<u>\$ 895</u>	
Average Growth CAPEX (2013-2017)					<u>\$ 763</u>	
Growth CAPEX (2015-2018)						<u>\$ 3,340</u>

## Calculation of Cash from Operating Activities as a Percent of Average Enterprise Value

<u>In Millions of Dollars except for common shares outstanding</u>	For the Years Ended December 31,					Average (2016-2018)
	2014	2015	2016	2017	2018	
<b>Cash from Operating Activities</b>	\$ 6,048	\$ 5,842	\$ 5,606	\$ 5,206	\$ 5,471	\$ 5,428
<b>Average Enterprise Value:</b>						
Common shares outstanding	486,969,402	440,150,069	404,046,331	394,512,054	375,696,661	
Daily average closing price	\$ 93.66	\$ 91.47	\$ 81.00	\$ 92.00	\$ 105.57	
<b>Market Capitalization</b>	45,610	40,261	32,728	36,295	39,662	
Current maturities of long-term debt	4	4	2	2	5	
Short-term debt	346	353	594	68	885	
Long-term debt	6,695	7,671	8,385	8,549	8,497	
Less:						
Cash and cash equivalents	1,031	924	875	1,523	332	
Short-term investments	1,593	1,064	1,147	1,307	892	
<b>Net Debt</b>	4,421	6,040	6,959	5,789	8,163	
<b>Redeemable non-controlling interests</b>	-	-	-	-	116	
<b>Non-controlling interests</b>	30	24	25	1	23	
<b>Enterprise Value</b>	\$ 50,061	\$ 46,325	\$ 39,712	\$ 42,085	\$ 47,964	\$ 43,254
<b>Cash from Operating Activities as a Percent of Enterprise Value</b>	12.1%	12.6%	14.1%	12.4%	11.4%	12.5%

## Calculation of EBITDA Margin (EBITDA/Revenue)

<b>In Millions of Dollars</b>	<b>Last Twelve Months Ended</b>		<b>Last Twelve Months Ended</b>
	<b>June 30, 2019</b>		<b>June 30, 2019</b>
<b>Integrated Polymers</b>			
EBITDA			
Olefins & Polyolefins - Americas	\$ 2,486		
Olefins & Polyolefins - EAI	1,016		
EBITDA	\$ 3,502		
Revenues			
Olefins & Polyolefins - Americas	\$ 6,120		
Olefins & Polyolefins - EAI	9,178		
Revenues	15,298		
EBITDA Margin	<u>23%</u>		
<b>Technology Enabled Products</b>			
EBITDA			
Intermediates & Derivatives - PO & Derivatives	\$ 644		
Advanced Polymer Solutions	424		
Technology	349		
EBITDA	\$ 1,417		
Revenues			
Intermediates & Derivatives - PO & Derivatives	\$ 2,164		
Advanced Polymer Solutions	4,949		
Technology	491		
Revenues	7,604		
EBITDA Margin	<u>19%</u>		
		<b>Intermediates and Fuels</b>	
		EBITDA	
		Intermediates & Derivatives - Intermediate Chemicals, Oxyfuels & Related	
		Products	\$ 1,077
		Refining	(81)
		EBITDA	\$ 996
		Revenues	
		Intermediates & Derivatives - Intermediate Chemicals, Oxyfuels & Related	
		Products	\$ 6,286
		Refining	7,675
		Revenues	13,961
		EBITDA Margin	<u>7%</u>

### Calculation of Technology Reporting Segment EBITDA Margin (EBITDA/Revenue)

<u>In Millions of Dollars</u>	December 31,		
	2016	2017	2018
Technology reporting segment			
EBITDA	\$ 262	\$ 223	\$ 328
Revenues	378	341	468
	<u>69%</u>	<u>65%</u>	<u>70%</u>
Approximate average EBITDA Margin			<u>70%</u>