

SEIZE THE MOMENT  
— SECURING THE FUTURE —

## Citi Basic Materials Conference

Sergey Vasnetsov  
SVP – Strategic Planning and Transactions

lyondellbasell  
| | | |



## 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 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; 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, 2012, 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.



## Information Related to Financial Measures

We have included EBITDA in this presentation, which is a non-GAAP measure, as we believe that EBITDA is a measure commonly used by investors. However, 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. For purposes of this presentation, EBITDA means 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. See slide # 26 for reconciliations of EBITDA to net income.

While we also believe that free cash flow (FCF) is a measure commonly used by investors, free cash flow, 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. For purposes of this presentation, free cash flow means net cash provided by operating activities minus capital expenditures.

# LYB Highlights

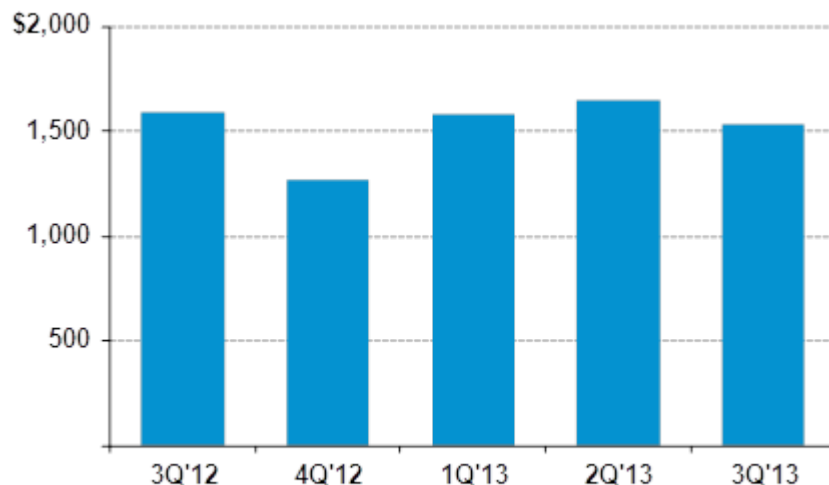
(\$ in millions, except per share data)

	LTM Sept 2013	FY 2012	FY 2011
EBITDA <sup>(1)</sup>	\$6,033	\$5,808	\$5,469
Income from Continuing Operations <sup>(1)</sup>	\$3,328	\$2,858	\$2,472
Diluted Earnings (\$ / share) from Continuing Operations	\$5.80	\$4.96	\$4.32

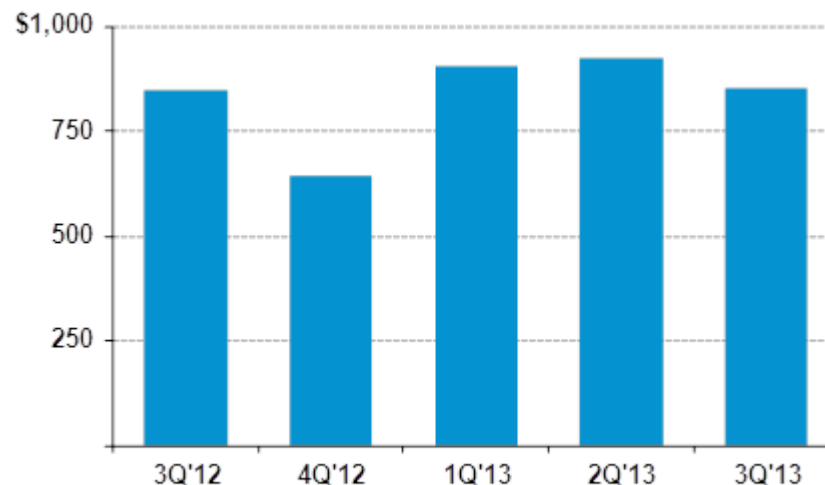
**LTM September 2013 EPS Growth**  
 vs. 2012: 17%                      vs. 2011: 34%

(\$ in millions)

## EBITDA<sup>(1)</sup>



## Income from Continuing Operations<sup>(1)</sup>

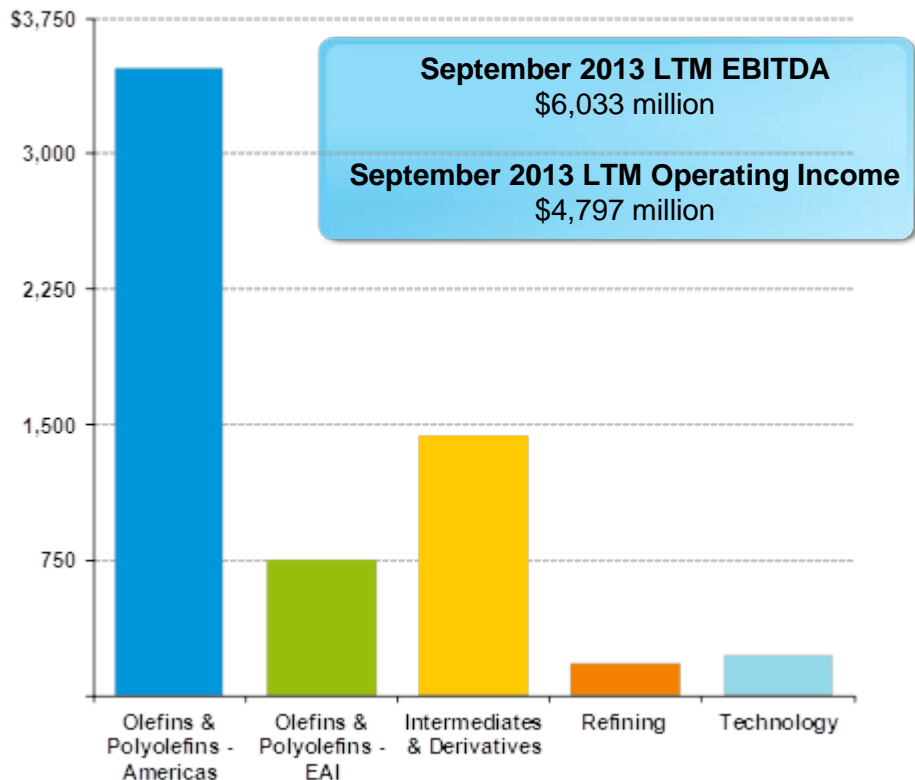


(1) EBITDA and Income from continuing operations include a pre-tax lower of cost or market inventory valuation adjustment of \$71 million in the third quarter which reversed a charge in the second quarter of 2012, due to a recovery in market price.

# World-Class Scale, Leading Market Positions

## September 2013 LTM EBITDA

(\$ in millions)



## Products

## Global Position

### Chemicals

Ethylene	#5
Propylene	#5
Propylene Oxide	#2

### Polymers

Polyolefins (PE + PP)	#1
Polypropylene	#1
Polyethylene	#4
Polypropylene Compounds	#1

### Fuels

Oxyfuels	#1
----------	----

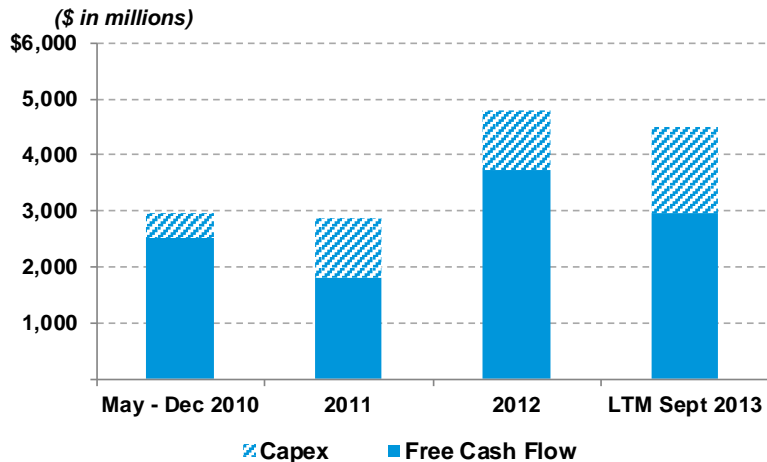
### Technology and R&D

Polyolefins Licensing	#2
-----------------------	----

Note: Positions based on LyondellBasell wholly owned capacity and pro rata share of JV capacities as of December 31, 2012.

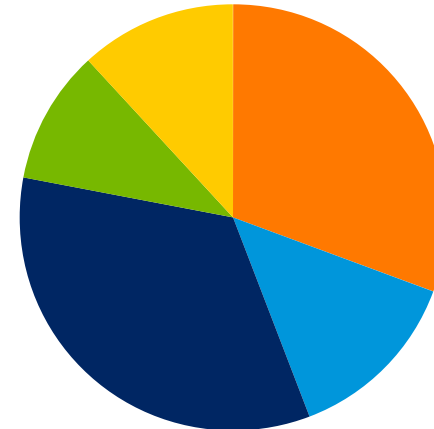
# Sustained Cash Generation: Share Repurchases & Dividends

## Cash From Operations



## Cash Deployment Since Inception<sup>(1)</sup>

~ \$ 12 Billion



■ Capex                      ■ Interim Dividends                      ■ Special Dividends  
■ Share Repurchases                      ■ Net Debt Repayment

## Key Statistics

### Snapshot at September 30, 2013

**LTM FCF: \$3.0 billion**  
**LTM Capex: \$1.5 billion**  
**Cash: \$4.4 billion**  
**Total Debt/LTM EBITDA: 1.0x**  
**Total Debt/Book Capital: 33%**

Robust Free Cash Flow generation allowed for debt repayment, large dividends (\$10.15/share<sup>(2)</sup> from 2011 through Third Quarter 2013), and share repurchases (~ 19 million shares since May'2013 approval through Sept. 30, 2013)

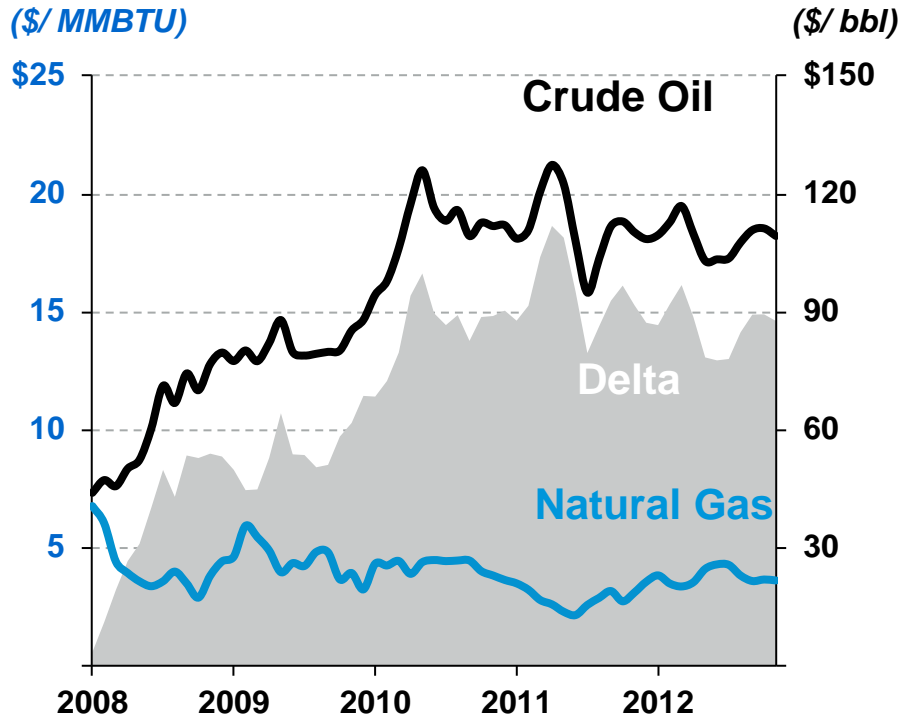
(1) Cash deployment since inception through September 30, 2013 is presented in this graph.  
 (2) Does not include the \$0.50 per share interim dividend declared in the third quarter and paid on October 7<sup>th</sup>, 2013.

# Optimizing Our Businesses

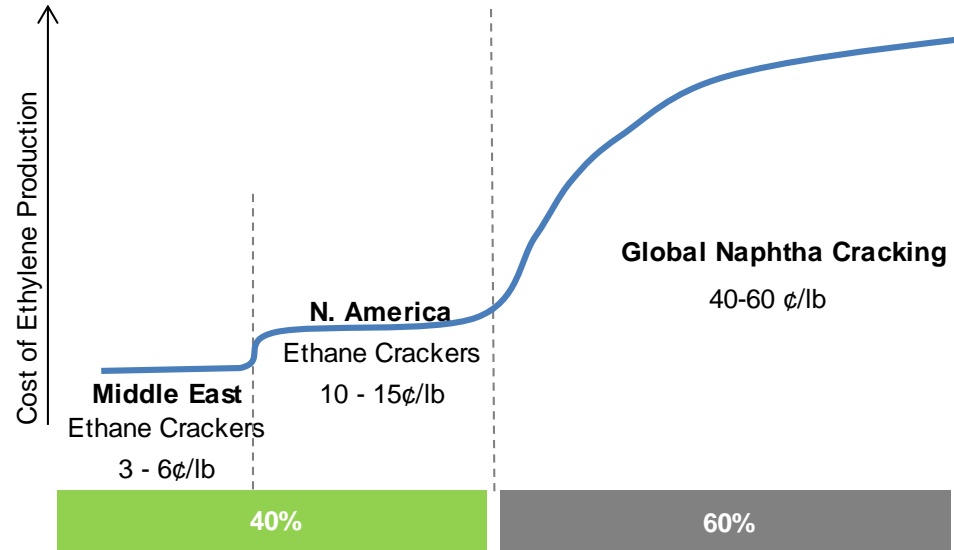
<u>Segment</u>	<u>LYB Market Position</u>	<u>Portfolio Role</u>
Olefins & Polyolefins – Americas	<ul style="list-style-type: none"> <li>• NGL advantage</li> <li>• Cyclical upside</li> </ul>	Invest
Olefins & Polyolefins – EAI	<ul style="list-style-type: none"> <li>• Commodities – naphtha based, with cyclical upside</li> <li>• Differentiated positions in <i>Catalloy</i>, PP compounding, and JVs</li> </ul>	Restructure
Intermediates & Derivatives (I&D)	<ul style="list-style-type: none"> <li>• Proprietary technologies</li> <li>• Natural gas advantage</li> </ul>	Invest
Refining	<ul style="list-style-type: none"> <li>• Large, heavy crude refinery</li> </ul>	Sustain
Technology	<ul style="list-style-type: none"> <li>• Strong technology position</li> <li>• Maintain leadership</li> </ul>	Optimize

# Macroeconomic Background

## U.S. Crude Oil vs. Natural Gas Price



## Ethylene Production Cost Curve



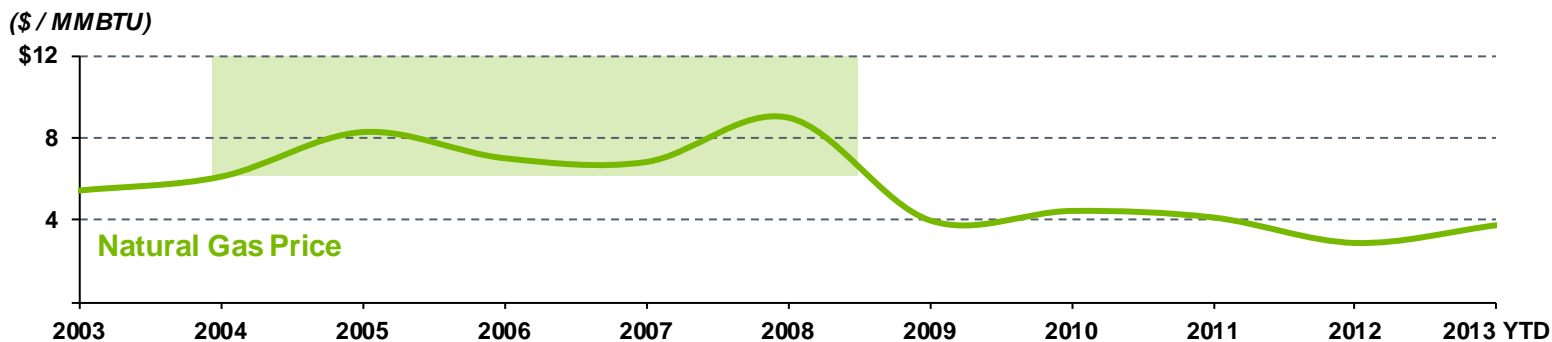
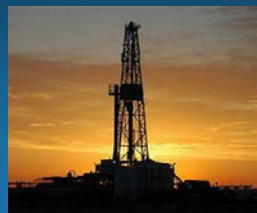
U.S. shale gas revolution significant driver of profitability in North American Olefins and Polyolefins and Intermediate and Derivatives business units

Sources: LYB estimates, third party consultants. Crude oil and natural gas data updated through mid-November 2013.

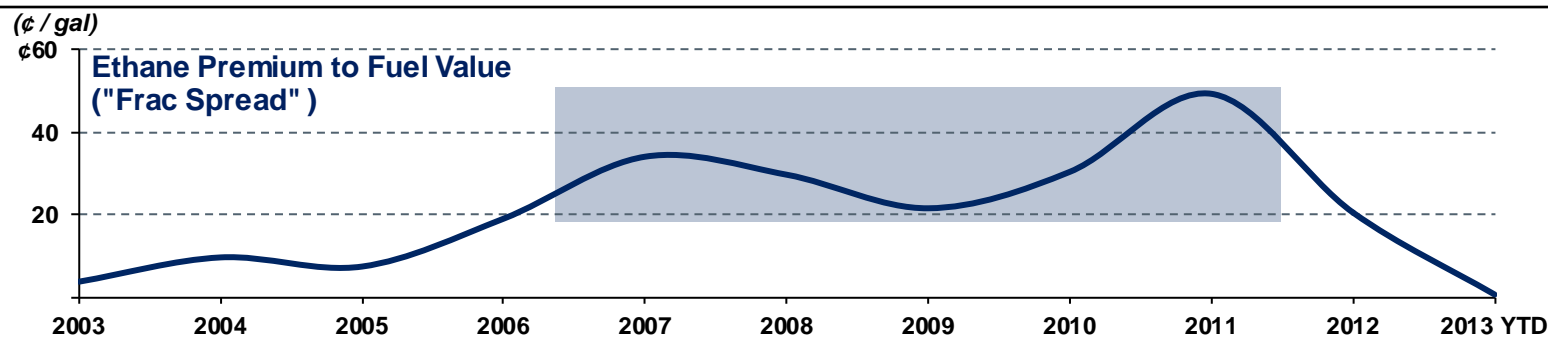


# Evolution of Shale Gas Value Chain

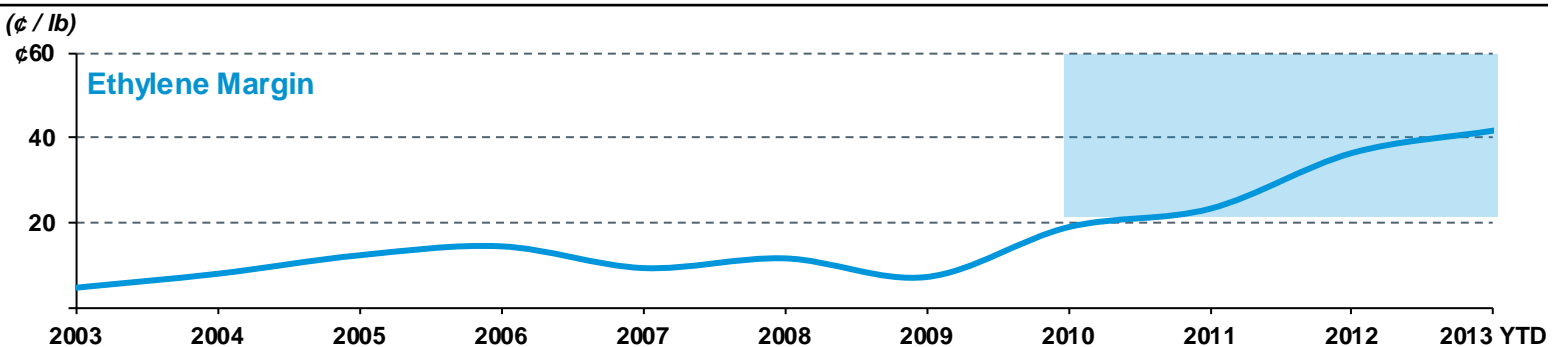
## Upstream (Natural Gas E&P)



## Midstream (Fractionation & Pipelines)



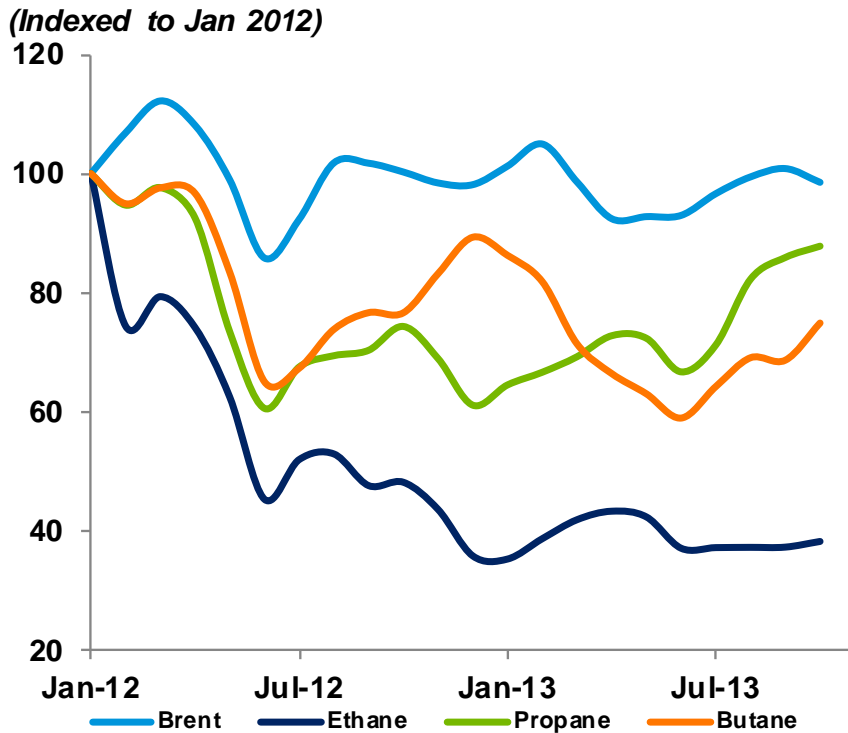
## Chemicals (Ethylene Crackers)



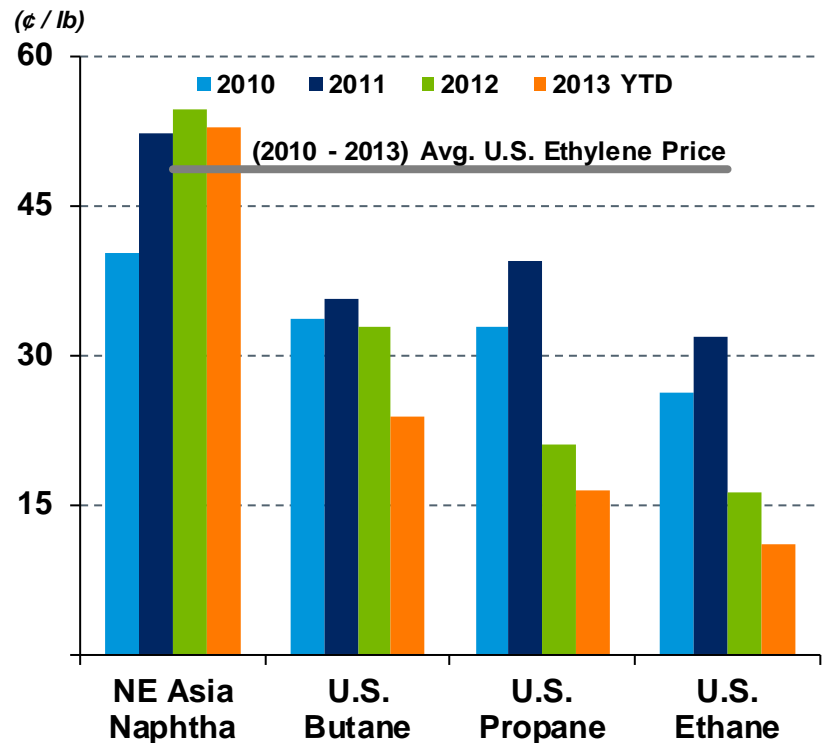
Source: Third party consultants. 2013YTD as of mid-November 2013.

# O&P – Americas: Fundamentals of Natural Gas / NGLs Have Defined the Environment

## U.S. NGL Prices vs. Brent



## Cost of Ethylene Production



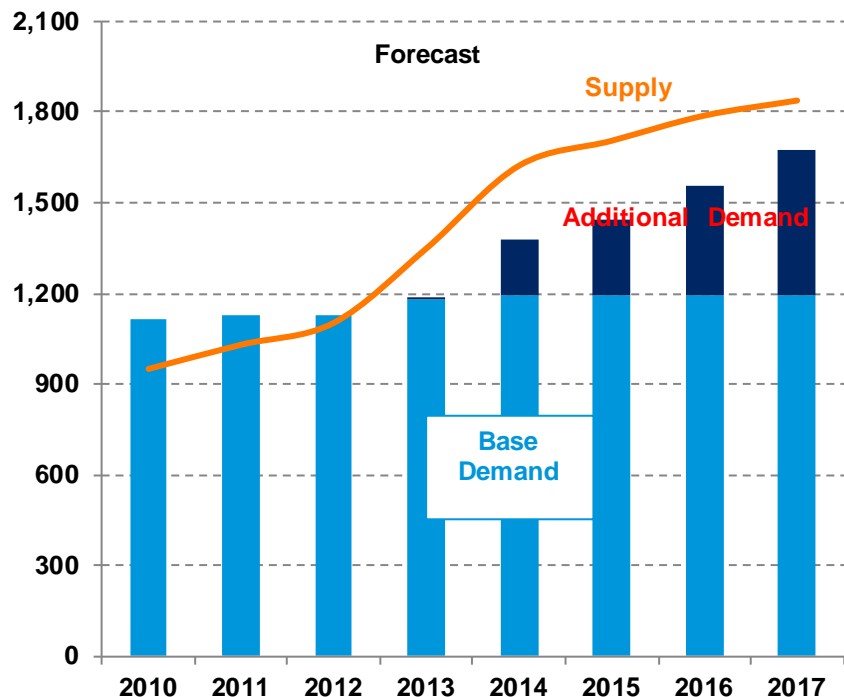
- U.S. NGL advantage has grown steadily
- Cost of ethylene production from naphtha has been high but stable
- LYB has increased NGL cracking capability from ~70% in 2010 to ~ 88% in the first nine months of 2013

Source: Third party consultants. 2013 YTD as of mid-November 2013.

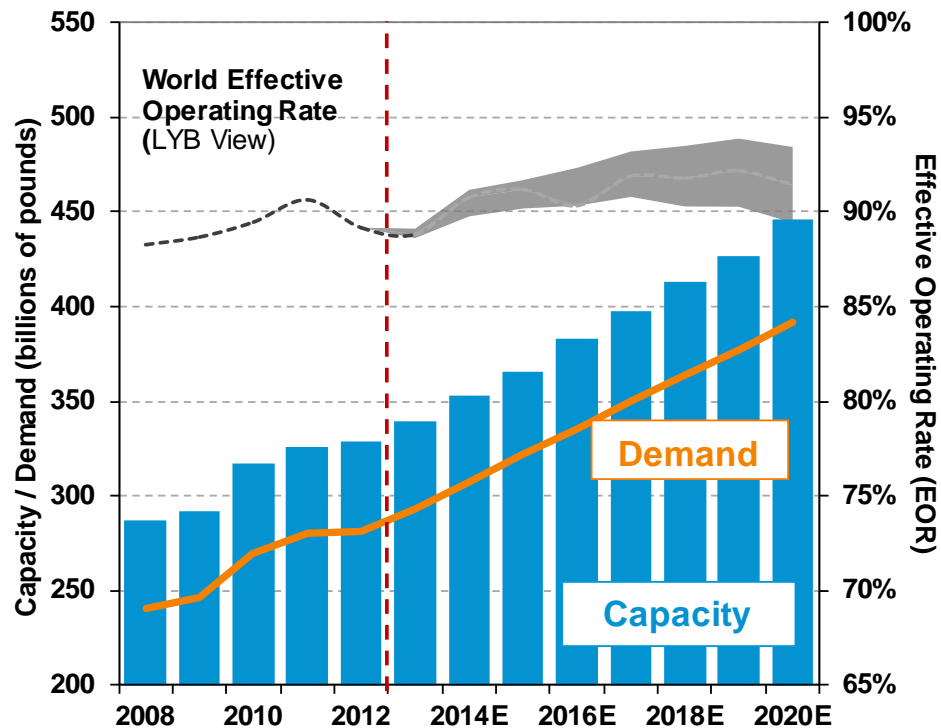
# Favorable Supply/Demand Balances

## U.S. Ethane Supply/Demand

(MBPD)



## Ethylene Global Operating Rates

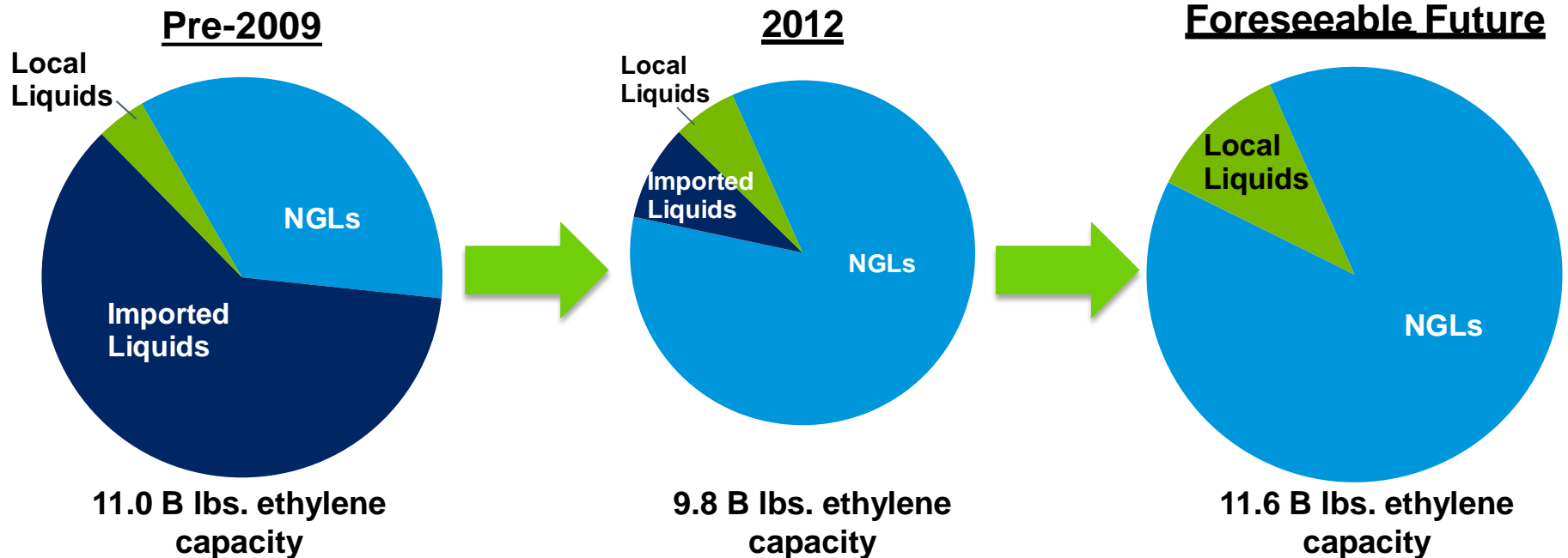


- N. America effective ethylene industry operating rate ~ 95% in 2013 YTD
- Ethane production is expected to continue exceeding demand

Source: Third party consultants and LYB estimates.

# O&P – Americas: Feedstock Flexibility Boosts Profitability

## LYB U.S. Ethylene Cracker Feedstock Flexibility



~ 88% of ethylene production in 2013 Q3 to date from NGLs

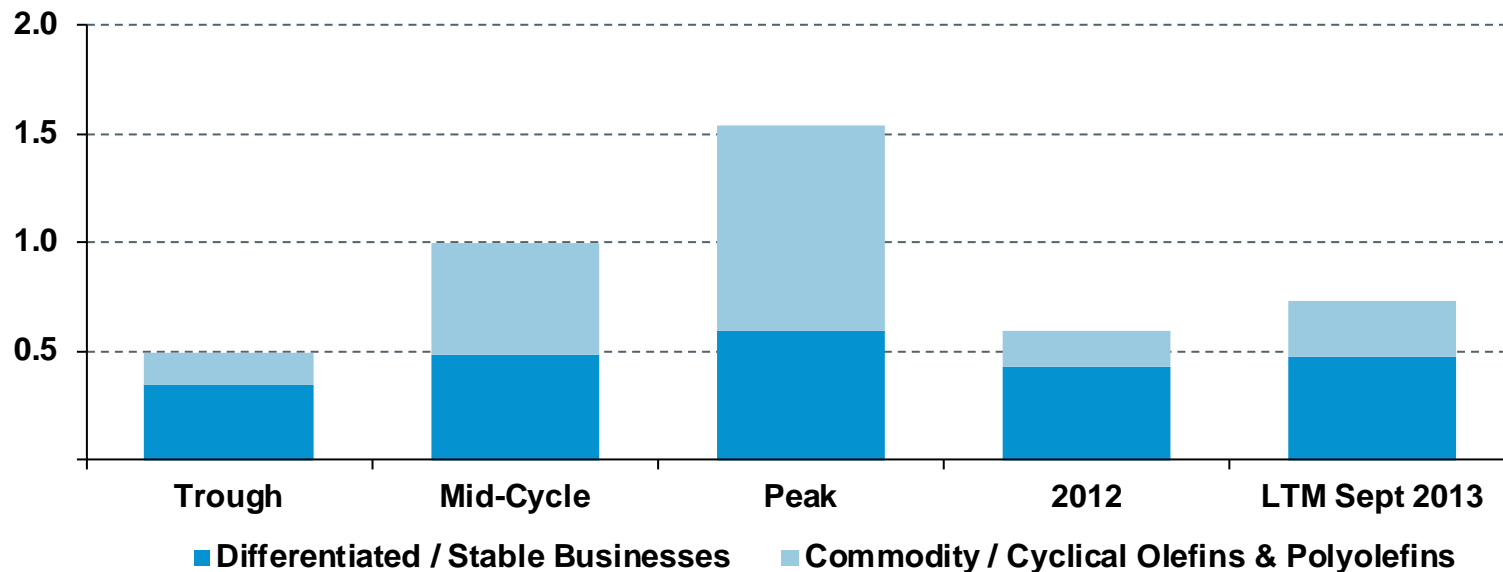
Source: LYB.

Note: Percentages based on volume of feedstock consumed. Future feedstock mix is LYB estimate.

# O&P – EAI: Our Recent Profits Were Primarily Generated from Our Differentiated Position

## Indexed O&P EAI EBITDA Scenarios <sup>(1)</sup>

(EBITDA Indexed, Mid-Cycle = 1.0)



- O&P EAI portfolio is more than European olefins and commodity polyolefins
  - Global polypropylene compounds
  - Middle East and Asian JVs
  - Premium grades of polyolefins (*Catalloy*, Polybutene-1)
- Differentiated products typically can represent \$350 - \$550 million per year over the cycle

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

# O&P – EAI: Significant Progress Through Restructuring and Improved Operations

Focus business management processes

Segment markets and customers

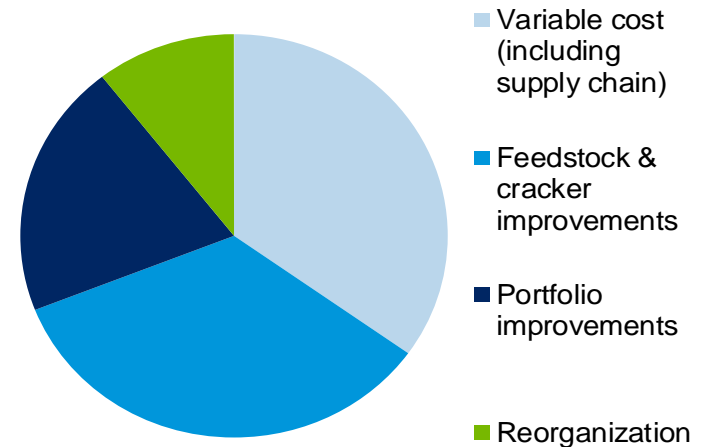
Simplify supply chain processes

Improve feedstock purchasing

Previously announced restructuring

Additional actions taken

## Estimated Efficiency Gains Through December 2012



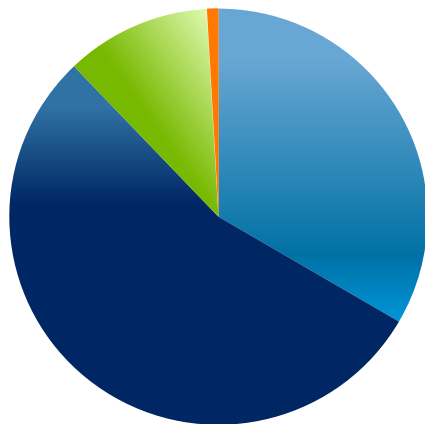
### Recent actions:

- Initiated closure of 100KT per year HDPE unit in Germany
- Increase ethylene from advantaged feedstocks from mid 20% in 2012 to mid 40% in Q3'2013
- Butadiene expansion

# I&D: Businesses Key Advantages

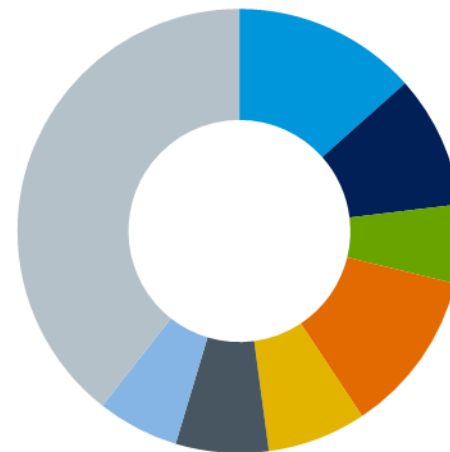
	PO	C4's / Oxyfuels	Acetyls	EO & Derivatives
Proprietary Technology	✓	✓	✓	
Advantaged NGL / Crude Oil Price Ratio		✓	✓	✓

## 2012 Intermediates & Derivatives EBITDA



- Proprietary Technology
- Proprietary Technology + Natural gas opportunities
- Natural gas and NGL opportunities
- Undifferentiated

## 2012 Sales by End Use<sup>(1)</sup>



- Packaging
- Building & Construction
- Coatings
- Electronics
- Other (Industrial uses)
- Consumer
- Transportation
- Textiles & Furnishings
- Fuel

(1) Estimated based on LYB 2012 Intermediates and Derivatives third party sales, and third party industry estimates of products end uses.

# I&D: Profitability Drivers for Propylene Oxide

## Key Drivers

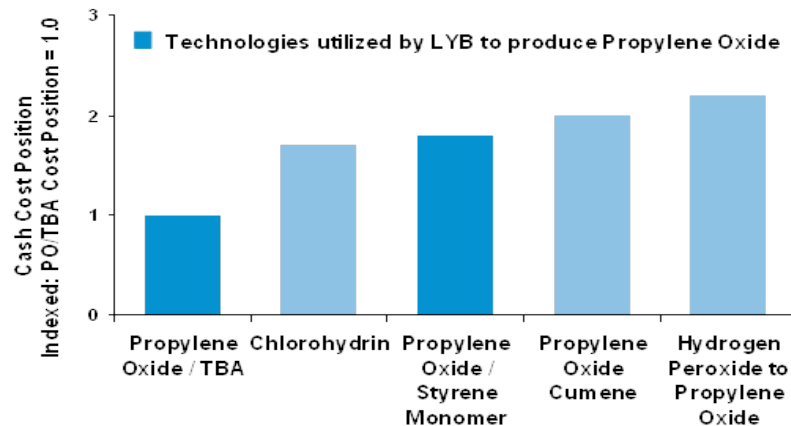
- Propylene oxide demand growth
  - 5% per year globally
  - 9% per year in Asia
- High barrier to entry

## Sources of LYB Competitive Advantage

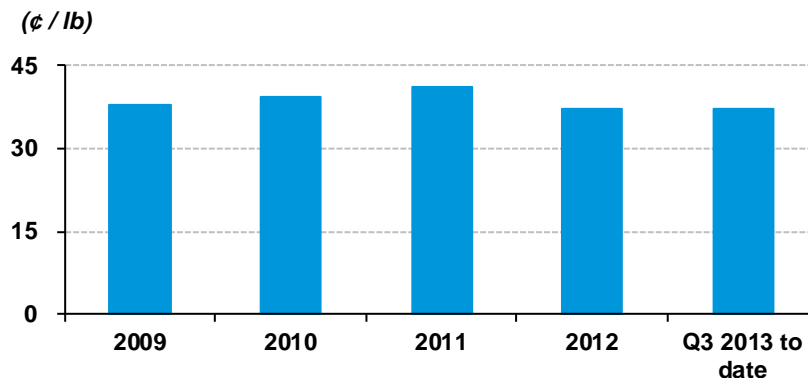
- Large global system
- Proprietary low cost technology

Source: Third party consultants and LYB 2012 data and estimates.

## Economics of PO Technologies



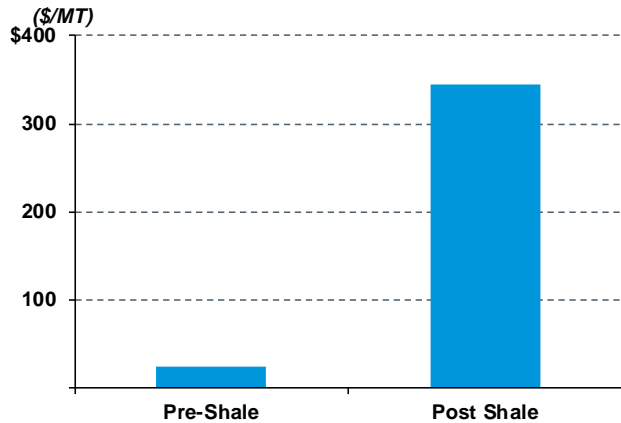
## Propylene Glycol Raw Material Margin



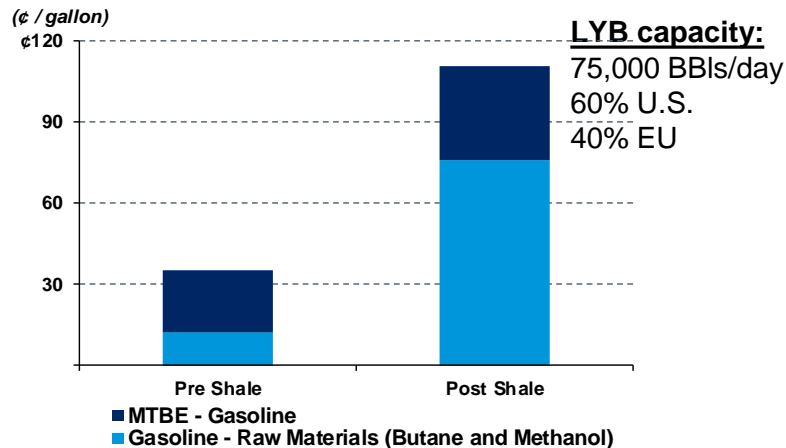


# I&D Benefits from Shale Gas Development – Methanol & Oxyfuels

## Methanol Cash Margins



## MTBE Spread Factors

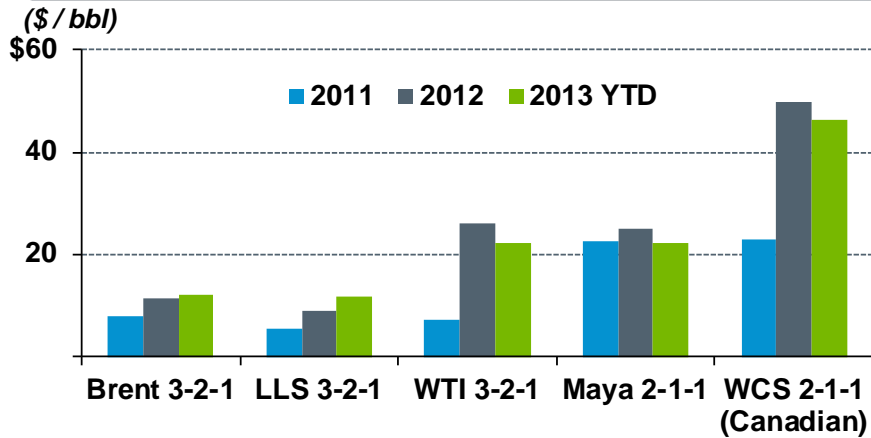


Sources: Third party consultants.

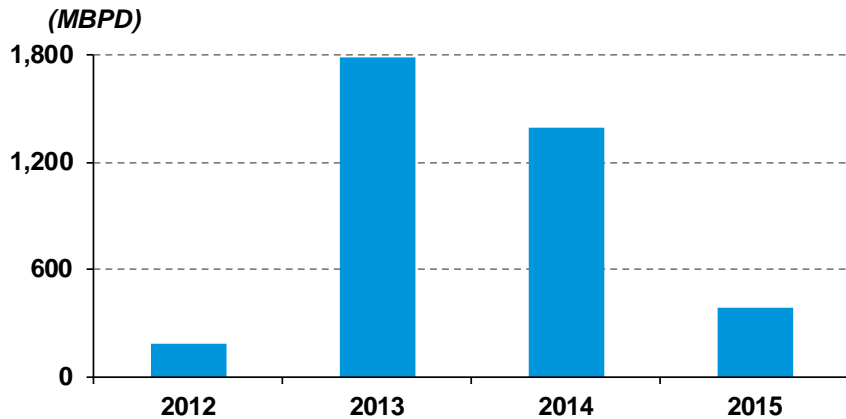


# Refining: Profitability Has Been Driven by Geography and Complexity

## Refining Spreads



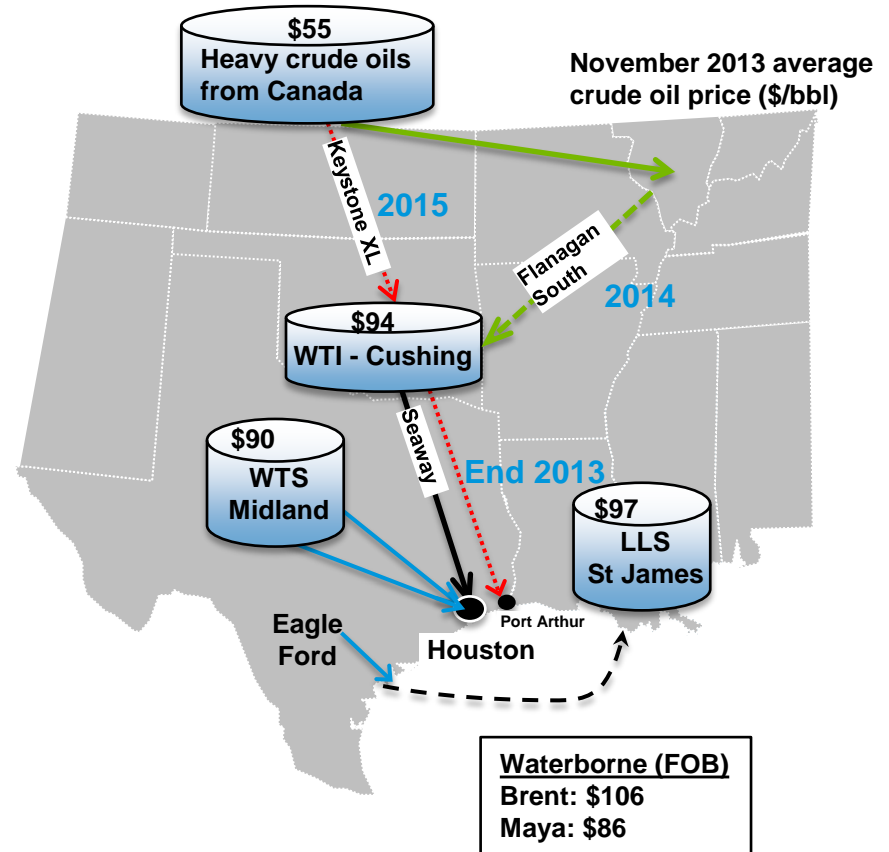
## Pipeline Capacity Increase



Source: Bloomberg and Wall Street research.

Notes: Maya 2-1-1 based on LLS pricing. WCS refers to west Canadian select vs. Gulf Coast products. 2013 YTD as of mid-November 2013.

## New Pipeline Capacity to Houston



# Cash Deployment Hierarchy

		Current Status	Comments
Foundation	Base Capex	\$700 - \$800 million/yr	<ul style="list-style-type: none"> <li>• First priorities for cash</li> </ul>
	Interest	~\$330 million/yr	
	Interim Dividend	\$0.60/share <sup>(1)</sup> per quarter	
Discretionary Opportunities	Growth Capex	~\$750 million per year over next 2 years	<ul style="list-style-type: none"> <li>• High-return in advantaged businesses</li> </ul>
	Share Repurchases / Special Dividend / Acquisitions	Balance of cash generated	<ul style="list-style-type: none"> <li>• Discretionary cash returned to shareholders</li> <li>• M&amp;A if strategic and meaningfully accretive</li> </ul>

(1) The supervisory board recently authorized a 20 percent increase in the interim dividend from \$0.50 per share to \$0.60 per share on Nov. 13, 2013.

# Growth and Operational Improvement Programs

<u>Opportunities</u>	<u>Capital Investments</u>	<u>Pre-tax Earnings</u>
Operational Improvements	Minimal	~ \$250 – 400 Million
Complete & Active Growth Projects	~ \$1,490 Million	~ \$1,140 - \$1,320 Million
Possible/ Developing Growth Projects	~ \$440 Million	~ \$300 - \$410 Million

At September 2013 LTM conditions, our growth and improvement programs are expected to generate an additional \$1.7 – 2.1 billion pre-tax earnings per year by 2017

(1) Costs are based on company estimates and earnings values are based on LTM September 2013 industry benchmark margins.

# Projects Completed and Active

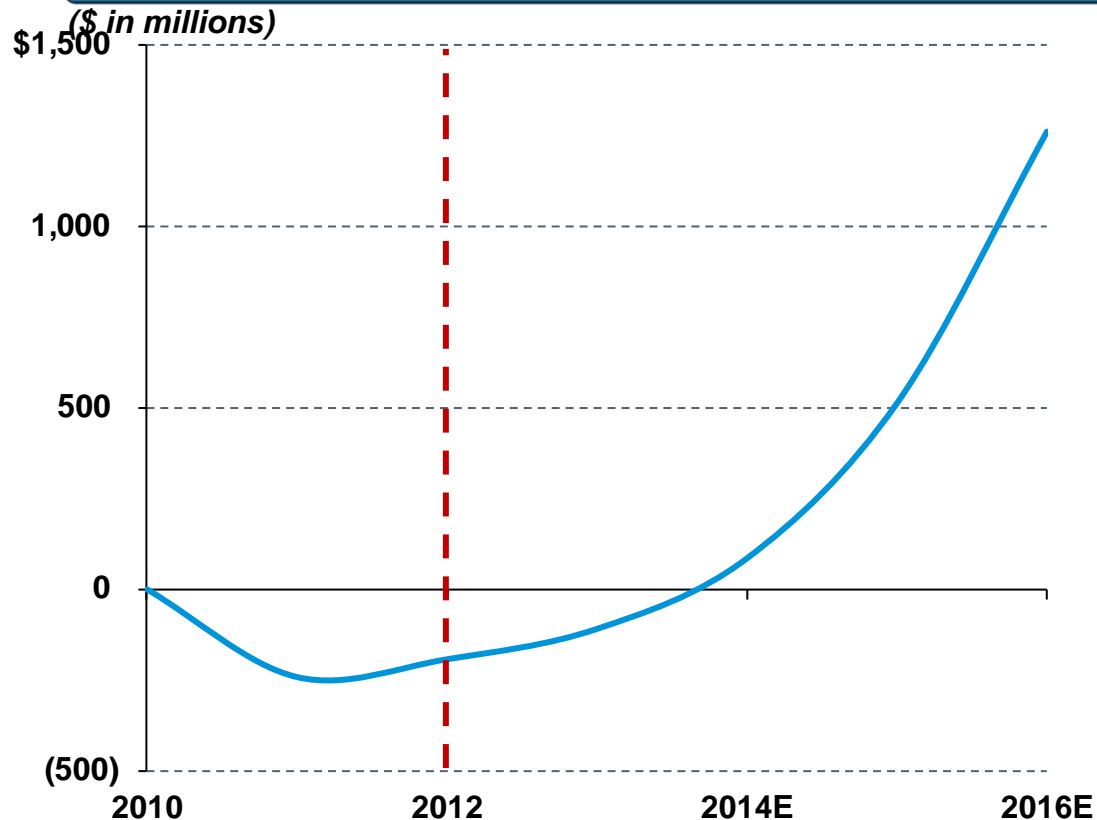
Project	Cost (\$Million)	Start-up	Potential Pre-Tax Earnings (\$ Million/year)
Increase Ethane Capability	~\$25	2012	\$120 - \$140
Midwest Debottlenecks	~\$25	2012	\$30 - \$40
EU Butadiene Expansion	~\$100	Mid 2013	\$40 - \$50
Methanol Restart	~\$170	Late 2013	\$250 - \$260
PE Debottleneck	~\$20	Early 2014	\$10 - \$20
La Porte Expansion	~\$420	Mid 2014	\$300 - \$350
Channelview Expansion	~\$200	Early 2015	\$90 - \$110
Corpus Christi Expansion	~\$530	Late 2015	\$300 - \$350
<b>Total</b>	<b>~ \$1,490</b>		<b>~ \$1,140 - \$1,320</b>

■ Complete    
 ■ In Construction    
 ■ Permit Pending

(1) Costs are based on company estimates and values are based on LTM September 2013 industry benchmark margins.

# Importance of Capital Project Selection

## Annual Cash Flow from Announced Growth Projects<sup>(1)</sup>



## Fast Execution & High Returns

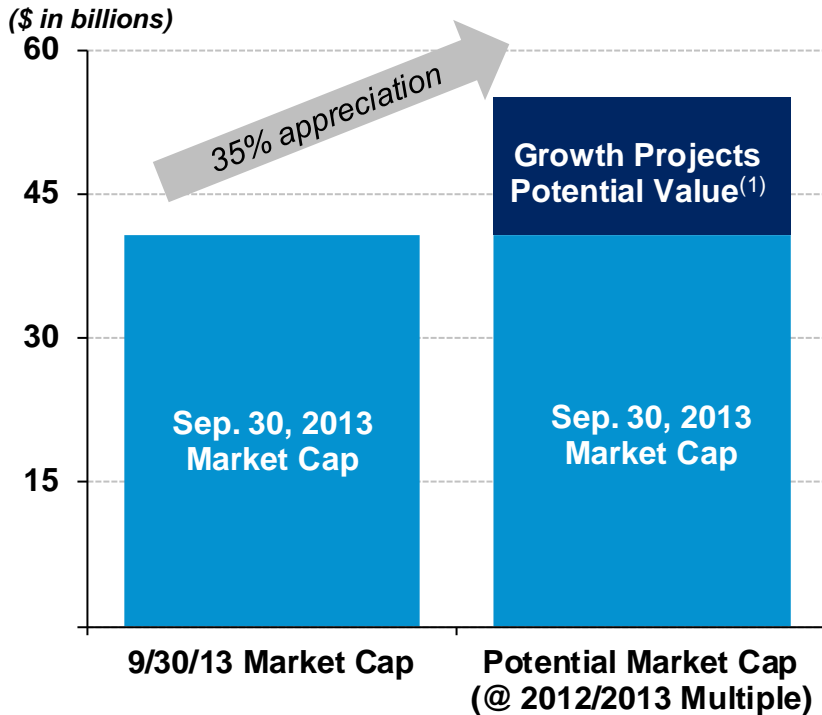
- Announced projects expected to be on line by 2016
- \$1.9 billion of announced growth capital expenditures from 2013 to 2016
- Over \$1.5 billion per year of additional EBITDA at LTM Sept 2013 margins by 2017

Capital project portfolio selected for optimum use of cash to maximize returns

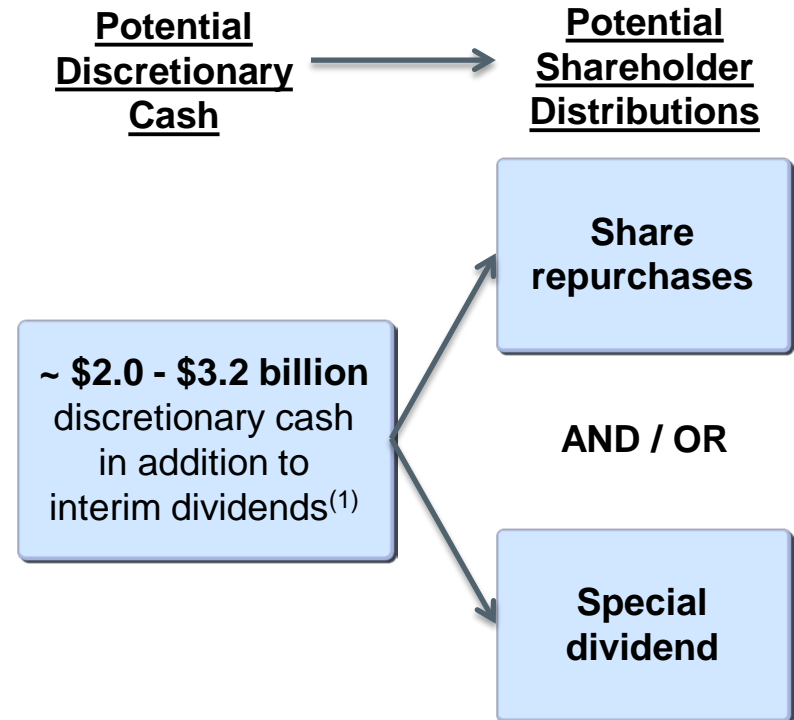
(1) EBITDA estimates assume LTM September 2013 benchmark margins for future periods. Cash flow defined as EBITDA less depreciation, cash taxes and capital expenditures.

# Value from Both Growth and Cash Distributions

## Growth Projects Value Potential



## Annual Discretionary Cash Potential<sup>(1)</sup>



Significant potential shareholder return from both growth investments and discretionary cash distributions

(1) Based on: Sep. 30, 2013 market capitalization, growth projects potential values at constant LTM September 2013 industry benchmark margins, the increase in 2013 interim dividends and interest on new debt issuance.

SEIZE THE MOMENT  
— SECURING THE FUTURE —

Appendix

lyondellbasell  
| | | | |



# Reconciliation of Segment Information to Consolidated Financial Information

## Reconciliation of Segment Information to Consolidated Financial Information

(Millions of U.S. dollars)	2012					2013			
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	YTD
<b>Sales and other operating revenues:</b>									
Olefins & Polyolefins - Americas	\$ 3,349	\$ 3,283	\$ 3,217	\$ 3,085	\$ 12,934	\$ 3,244	\$ 3,251	\$ 3,315	\$ 9,810
Olefins & Polyolefins - Europe, Asia, International	3,898	3,575	3,448	3,600	14,521	3,800	3,708	3,594	11,102
Intermediates & Derivatives	2,485	2,285	2,637	2,251	9,658	2,282	2,217	2,452	6,951
Refining	3,203	3,496	3,272	3,320	13,291	2,468	3,077	3,177	8,722
Technology	119	115	124	140	498	134	132	124	390
Other	(1,320)	(1,506)	(1,425)	(1,299)	(5,550)	(1,259)	(1,282)	(1,510)	(4,051)
Continuing Operations	\$ 11,734	\$ 11,248	\$ 11,273	\$ 11,097	\$ 45,352	\$ 10,669	\$ 11,103	\$ 11,152	\$ 32,924
<b>Operating income (loss):</b>									
Olefins & Polyolefins - Americas	\$ 519	\$ 700	\$ 738	\$ 693	\$ 2,650	\$ 821	\$ 872	\$ 759	\$ 2,452
Olefins & Polyolefins - Europe, Asia, International	3	203	15	(94)	127	93	189	78	360
Intermediates & Derivatives	370	390	424	246	1,430	323	285	371	979
Refining	10	124	114	86	334	(17)	(16)	(37)	(70)
Technology	38	30	31	23	122	50	39	35	124
Other	--	2	6	5	13	(3)	(5)	1	(7)
Continuing Operations	\$ 940	\$ 1,449	\$ 1,328	\$ 959	\$ 4,676	\$ 1,267	\$ 1,364	\$ 1,207	\$ 3,838
<b>Depreciation and amortization:</b>									
Olefins & Polyolefins - Americas	\$ 65	\$ 71	\$ 69	\$ 76	\$ 281	\$ 75	\$ 69	\$ 73	\$ 217
Olefins & Polyolefins - Europe, Asia, International	69	69	63	84	285	77	76	78	231
Intermediates & Derivatives	47	48	49	50	194	48	50	50	148
Refining	38	37	36	37	148	36	37	45	118
Technology	18	19	18	18	73	17	20	16	53
Other	--	--	1	1	2	--	2	--	2
Continuing Operations	\$ 237	\$ 244	\$ 236	\$ 266	\$ 983	\$ 253	\$ 254	\$ 262	\$ 769
<b>EBITDA: (a)</b>									
Olefins & Polyolefins - Americas	\$ 595	\$ 781	\$ 814	\$ 778	\$ 2,968	\$ 898	\$ 951	\$ 841	\$ 2,690
Olefins & Polyolefins - Europe, Asia, International	115	305	102	26	548	225	295	204	724
Intermediates & Derivatives	417	432	475	297	1,621	373	338	427	1,138
Refining	48	160	150	123	481	20	20	8	48
Technology	56	50	49	42	197	66	59	52	177
Other	(4)	(1)	(1)	(1)	(7)	3	(11)	(1)	(9)
Continuing Operations	\$ 1,227	\$ 1,727	\$ 1,589	\$ 1,265	\$ 5,808	\$ 1,585	\$ 1,652	\$ 1,531	\$ 4,768
<b>Capital, turnarounds and IT deferred spending:</b>									
Olefins & Polyolefins - Americas	\$ 102	\$ 135	\$ 126	\$ 105	\$ 468	\$ 122	\$ 122	\$ 218	\$ 462
Olefins & Polyolefins - Europe, Asia, International	60	39	60	95	254	63	46	44	153
Intermediates & Derivatives	18	24	44	73	159	106	141	119	366
Refining	38	27	24	47	136	93	67	36	196
Technology	9	8	12	14	43	7	6	7	20
Other	2	3	1	(1)	5	--	5	(1)	4
Total	229	236	267	333	1,065	391	387	423	1,201
Deferred charges included above	(1)	(3)	(1)	--	(5)	--	--	--	--
Continuing Operations	\$ 228	\$ 233	\$ 266	\$ 333	\$ 1,060	\$ 391	\$ 387	\$ 423	\$ 1,201

(a) See slide 26 for EBITDA calculation.

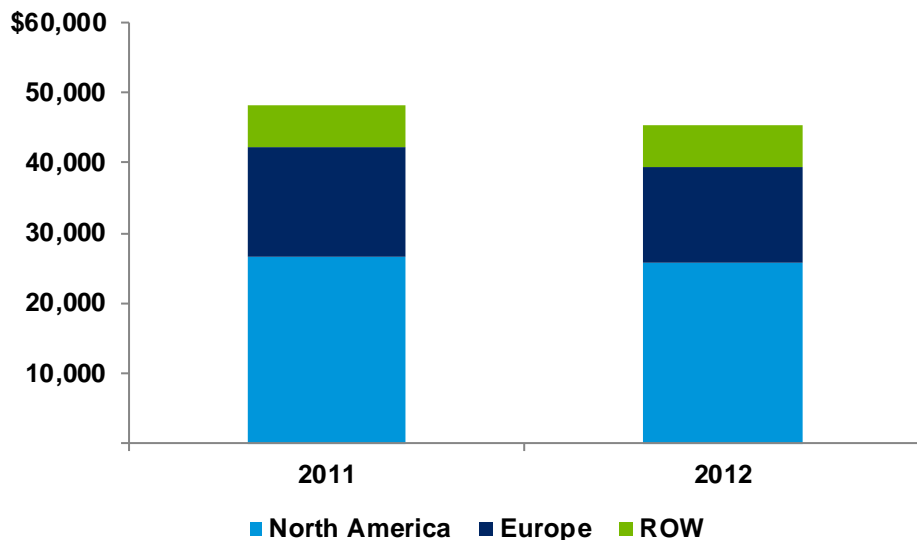
# Reconciliation of EBITDA to Income from Continuing operations

(Millions of U.S. dollars)	2012					2013			
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	YTD
Net income attributable to the Company shareholders	\$ 600	\$ 770	\$ 846	\$ 632	\$ 2,848	\$ 901	\$ 929	\$ 853	\$ 2,683
Net income (loss) attributable to non-controlling interests	(1)	(2)	(2)	(9)	(14)	(1)	(2)	(2)	(5)
(Income) loss from discontinued operations, net of tax	(5)	--	7	22	24	6	(4)	3	5
<b>Income from continuing operations</b>	<b>594</b>	<b>768</b>	<b>851</b>	<b>645</b>	<b>2,858</b>	<b>906</b>	<b>923</b>	<b>854</b>	<b>2,683</b>
Provision for income taxes	301	306	435	285	1,327	357	410	339	1,106
Depreciation and amortization	237	244	236	266	983	253	254	262	769
Interest expense, net	95	409	67	69	640	69	65	76	210
<b>EBITDA</b>	<b>\$ 1,227</b>	<b>\$ 1,727</b>	<b>\$ 1,589</b>	<b>\$ 1,265</b>	<b>\$ 5,808</b>	<b>\$ 1,585</b>	<b>\$ 1,652</b>	<b>\$ 1,531</b>	<b>\$ 4,768</b>

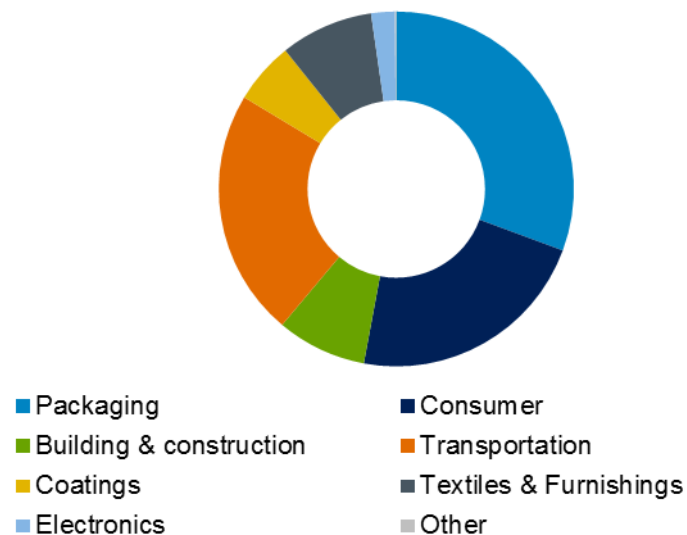
(Millions of U.S. dollars)	2011				
	Q1	Q2	Q3	Q4	Total
Net income (loss) attributable to the Company shareholder	\$ 663	\$ 804	\$ 895	\$ (215)	\$ 2,147
Net loss attributable to non-controlling interests	(3)	(1)	-	(3)	(7)
Loss from discontinued operations, net of tax	22	48	17	245	332
<b>Income from continuing operations</b>	<b>682</b>	<b>851</b>	<b>912</b>	<b>27</b>	<b>2,472</b>
Provision for (benefit from) income taxes	263	388	506	(98)	1,059
Depreciation and amortization	215	224	237	255	931
Interest expense, net	156	163	146	542	1,007
<b>EBITDA</b>	<b>\$ 1,316</b>	<b>\$ 1,626</b>	<b>\$ 1,801</b>	<b>\$ 726</b>	<b>\$ 5,469</b>

# LYB Has Diverse Footprint and End Uses

## Sales by Region



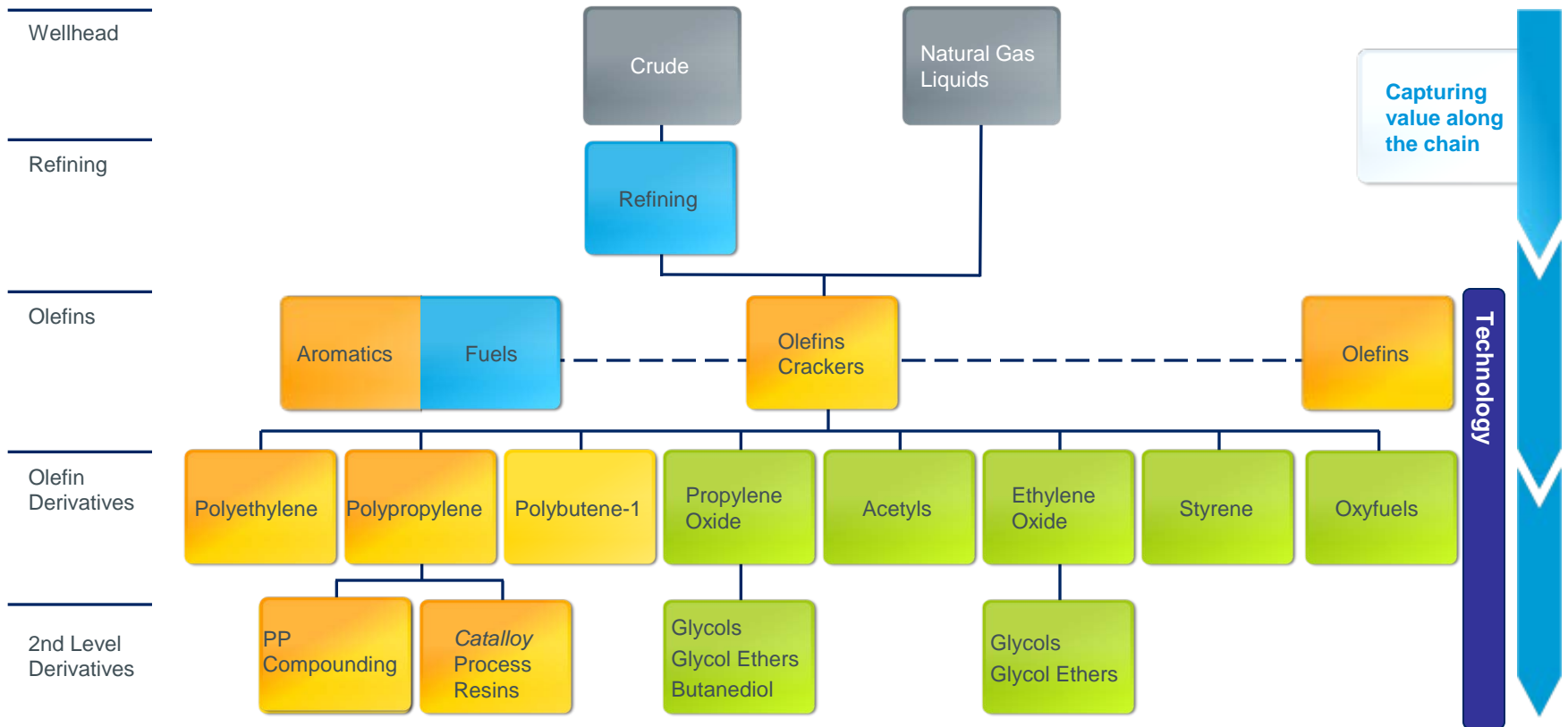
## 2012 Chemical Sales by End Use<sup>(1)</sup>



N. America sales represent ~ 55% of total company revenues

(1) Estimated based on LYB 2012 third party chemical sales (O&P and Intermediates & Derivatives segments excluding olefin fuel products and oxyfuel sales) and third party industry volume estimates of product end uses.

# Diversified and Vertically Integrated Portfolio



● **Olefins & Polyolefins Americas**

● **Olefins & Polyolefins Europe Asia & International**

● **Intermediates & Derivatives**

● **Refining**

● **Technology**

# Olefins & Polyolefins – Americas

- **Largest light olefins producer in North America**
  - #1 propylene, #2 ethylene
  - Significant competitive advantage with scale, feedstock supply flexibility and vertical integration
- **Third largest polyethylene producer in North America**
  - Broad product portfolio provides market diversification and differential economics
- **Largest polypropylene producer in North America**
  - Advantaged propylene position due to high degree of integration
  - *Catalloy* adds specialty component

## Product Position and Footprint

Product	Facilities	Capacity <sup>(1)</sup>	NA Ranking
Light Olefins	6 Crackers	9.8 Bn lbs (ethylene)	#1
Polypropylene	4 sites <sup>(2)</sup>	4.4 Bn lbs	#1
Polyethylene	6 sites	5.9 Bn lbs	#3



Market leading positions + U.S. Natural Gas Liquids Advantage

Sources: Third party consultant, LYB.

(1) - Includes LYB wholly owned capacity and 100% of JV capacity as of December 31, 2012.

(2) - Includes Indelpro JV.

# Olefins & Polyolefins - Europe, Asia, International

- **Moderate olefins position**

- Medium-size light olefins player in Western Europe

- **Large scale polymer position**

- Largest polyethylene producer in Western Europe
  - #1 high density polyethylene
  - #3 low density polyethylene
- Largest polypropylene producer in Western Europe with *Catalloy* adding to differentiation capability
- Largest PP Compounds producer globally

- **Significant Joint Ventures**

- 8 JVs in Middle East and Asia-Pacific

## Product Position and Footprint

Product	Facilities	Capacity <sup>(1)</sup>	W.E. Ranking
Ethylene	5 Crackers (1 JV)	6.5 Bn lbs	#6
Butadiene	2 sites	550 Mn lbs	#4
Polypropylene	16 sites (7 JVs)	13.0 Bn lbs	#1
Polyethylene	6 sites (2 JVs)	7.2 Bn lbs	#1
PP Compounding	16 sites (3 JVs)	2.6 Bn lbs	#1



Differentiated positions have provided steady results

Sources: Third party consultant, LYB.

(1) - Includes LYB wholly owned capacity and 100% of JV capacity as of December 31, 2012.

# Intermediates & Derivatives (I&D)

- **Leading propylene oxide position and technology**

- #2 propylene oxide producer worldwide

- **Several products benefit from natural gas vs. crude oil**

- Acetyls
  - Ethylene oxygenates
  - HP-Isobutylene
  - Oxyfuels

## Product Position and Footprint

<u>Products</u>	<u>Facilities</u>	<u>Capacity<sup>(1)</sup></u>
Propylene Oxide	7 Sites	5.2 Bn lbs
Acetic Acid	1 Site	1.2 Bn lbs
Ethylene Glycol	1 Site	0.7 Bn lbs
Isobutylene	3 Site	1.4 Bn lbs
Oxyfuels	4 Sites	75,000 bbls/day
Styrene	4 Sites	6.4 Bn lbs



I&D – A robust and diversified portfolio

Sources: Third party consultant, LYB.

(1) - Includes LYB wholly owned capacity and 100% of JV capacity as of December 31, 2012.

# Refining

- **Independent gulf coast refinery**
  - Crude capacity of 268 MBPD
  - Nelson complexity index of 12.5
- **Process heavy, high sulfur crude oil**
  - Typically sold at discount
- **Benchmark spread**
  - Maya 2-1-1
  - Diesel production approximately equal to gasoline

## Houston Refinery

<u>Refinery Units</u>	<u>Number of Units</u>	<u>Capacity</u>
Crude	2	268 MBPD

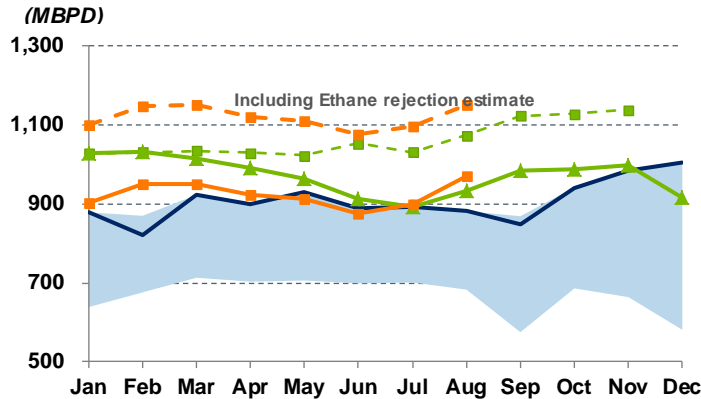


World class, high conversion, highly integrated refinery

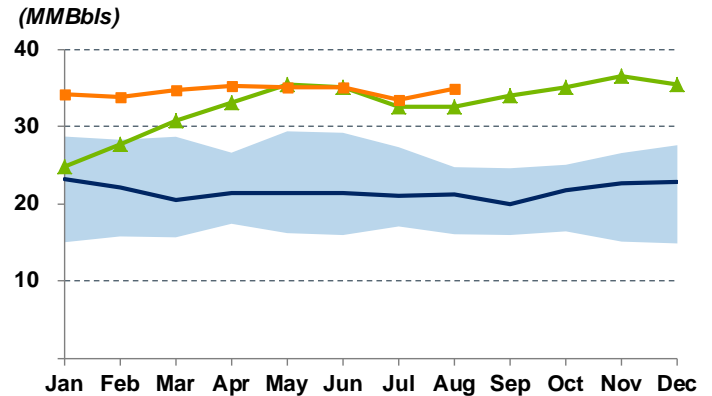


# Production and Inventories Remain Near Record Levels

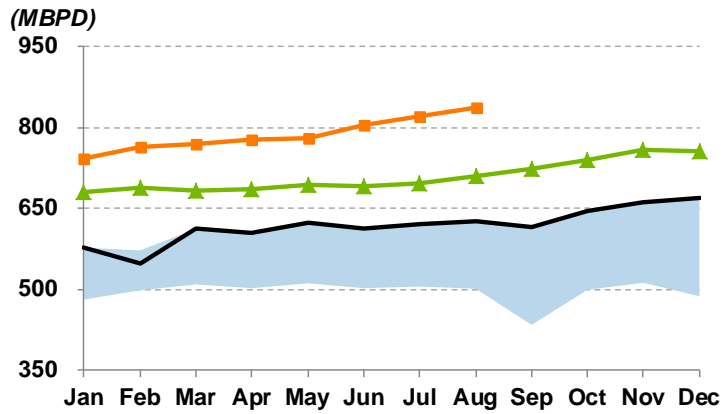
## Historical Ethane Production



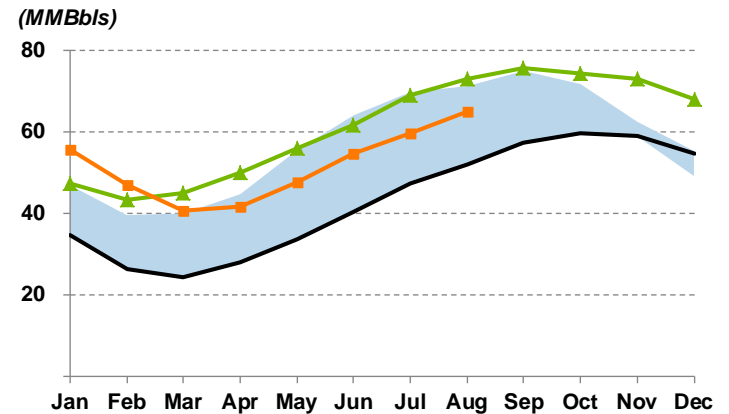
## Historical Ethane Inventory



## Historical Propane Production



## Historical Propane Inventory



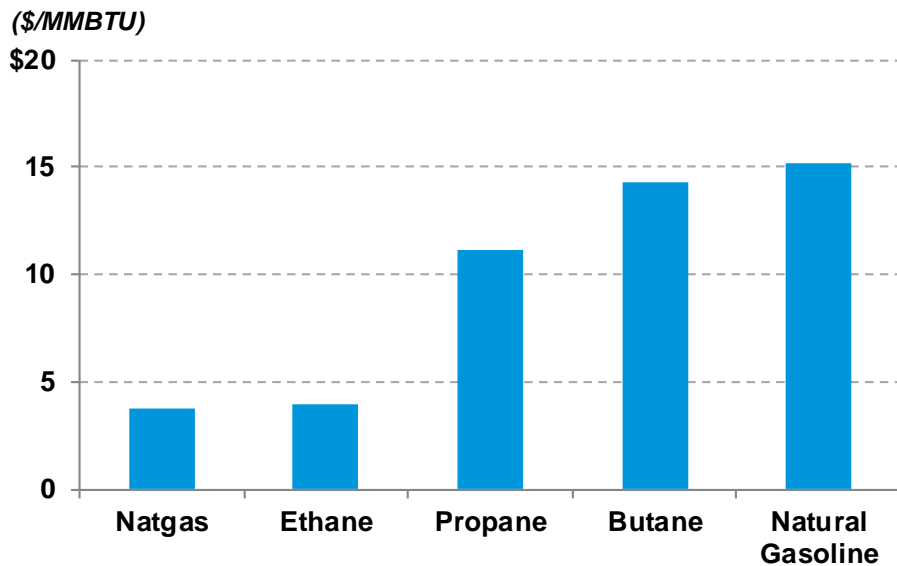
2007 - 2011 Range 2011

2012 2013

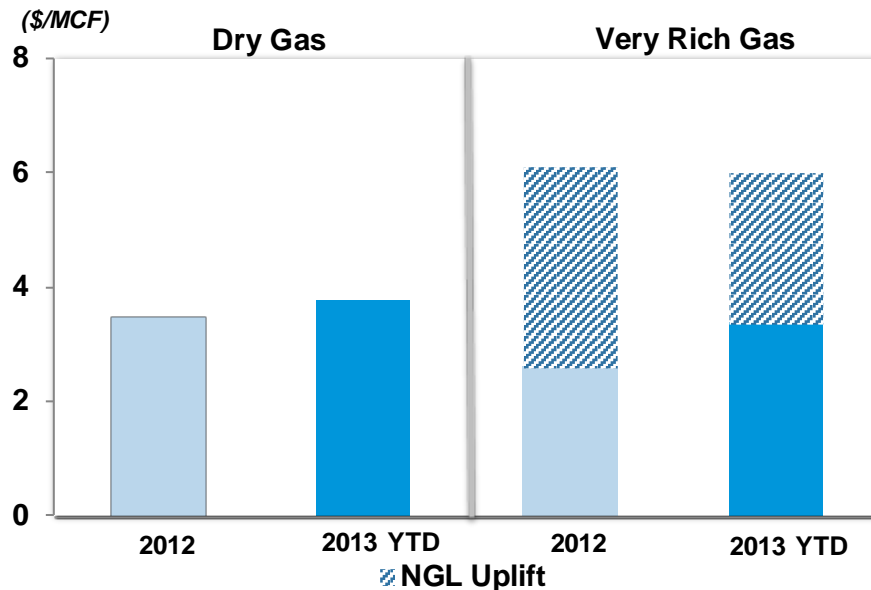
Sources: EIA and LYB estimates.

# O&P – Americas: The Value of NGLs Drives Production Even at Low Natural Gas Prices

## NGL Component Values vs. Natural Gas



## Dry vs. Rich Gas: NGL Uplift (Margin Over Fuel Value)



NGLs provide significant additional value to gas producers

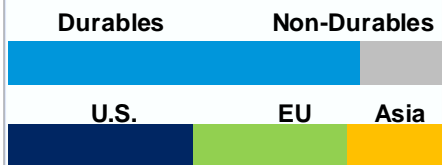
Source: Third party consultants, LYB. Data as of mid-November 2013.

# I&D: Globally Diversified End Uses

## Propylene Oxide & Derivatives



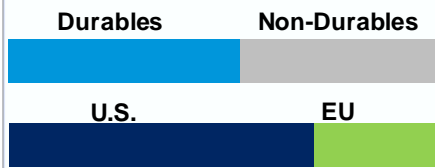
- Home and auto cushioning
- Insulation foams
- Polyester composites
- Coatings
- Automotive parts
- Spandex



## Acetyls



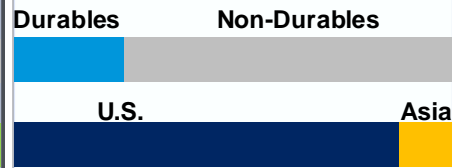
- Food packaging
- Textiles
- Coatings
- Safety glass



## Ethylene Oxide & Derivatives



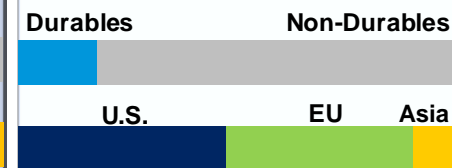
- Surfactants
- Antifreeze
- Industrial coatings
- Polyester



## Co-Products: Oxyfuels, Isobutylene and Styrene



- Gasoline blending
- Lube & fuel additives
- Tires
- Polyester composites
- Food packaging



Note: estimated based on LYB 2012 Intermediates and Derivatives third party sales by region, and third party industry estimates of products end uses.

# Possible/Developing Growth Projects

Project	Cost (\$Million)	Start-up	Potential Pre-Tax Earnings (\$ Million/year)
PP Compounding Growth	~ \$40	2013 - 2016	\$70 - \$90
PO/TBA Joint Venture	MOU	2016	\$70 - \$90
Olefins NGL Recovery	~ \$200	2016	\$110 - \$130
Possible New PE line	~ \$200	Late 2016	\$50 - \$100
<b>Total</b>	<b>~ \$440</b>		<b>~ \$300 - \$410</b>

Additional strong projects under development

(1) Capital costs are based on preliminary 2013 company estimates and values are based on September 2013 LTM industry benchmark margins.