



# Barclay's Americas Select Franchise Conference

Bob Patel

EVP – Olefins and Polyolefins – E&I and Technology

May 13, 2014

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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, 2013, 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



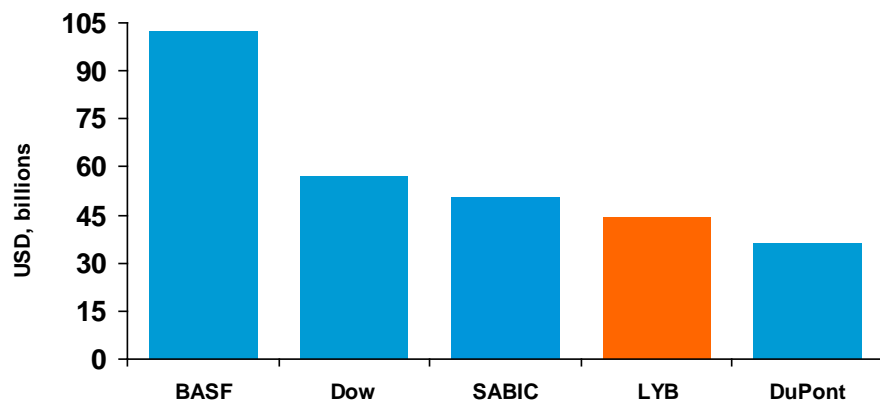
We have included EBITDA in this presentation, which is a non-GAAP measure, as we believe that EBITDA is a measure commonly used by investors. However, EBITDA, as presented herein, may not be comparable to a similarly titled measure reported by other companies due to differences in the way the measure 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 slides # 24 and 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.

# World-Class Scale With Leading Positions



**2013 Revenues**



(\$ in millions, except per share data)	FY 2013	FY 2012	FY 2011
<b>EBITDA</b>	\$6,311	\$5,808	\$5,469
<b>Income from Continuing Operations</b>	\$3,860	\$2,858	\$2,472
<b>Diluted Earnings (\$/share) from Continuing Operations</b>	\$6.76	\$4.96	\$4.32

**Products**

**Global Capacity Position**

**Chemicals**

- Ethylene #5
- Propylene #5
- Propylene Oxide #2

**Polymers**

- Polyolefins (PE + PP) #3
- Polypropylene #1
- Polyethylene #5
- Polypropylene Compounds #1

**Fuels**

- Oxyfuels #1

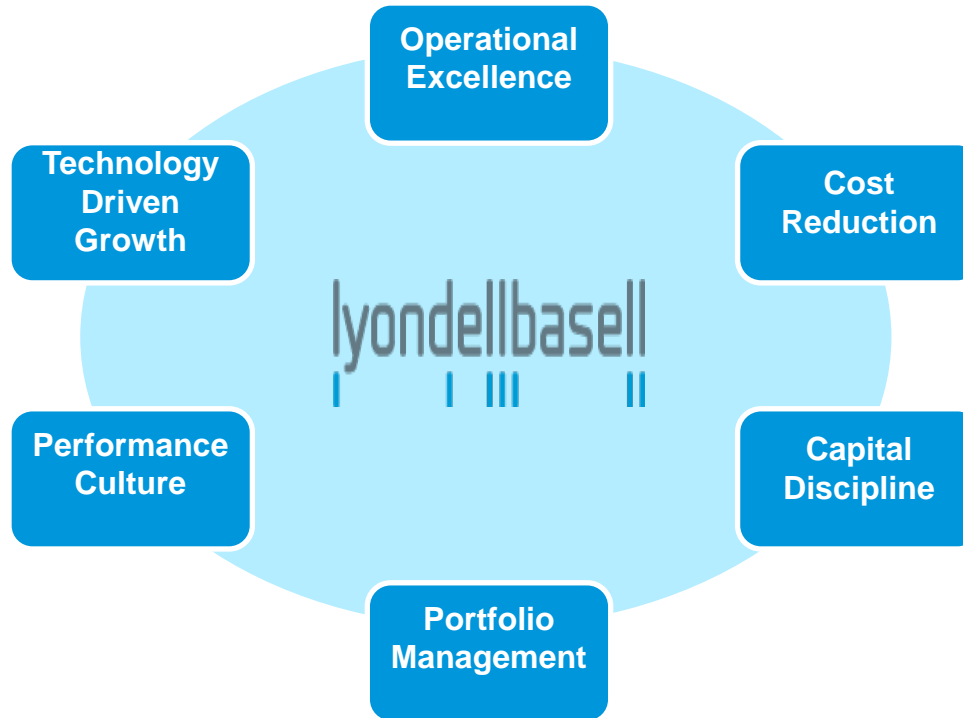
**Technology and R&D**

- Polyolefin Licensing #3



Source of data: revenues chart from capital IQ. Positions based on LyondellBasell wholly owned capacity and pro rata share of JV capacities as of December 31, 2013.

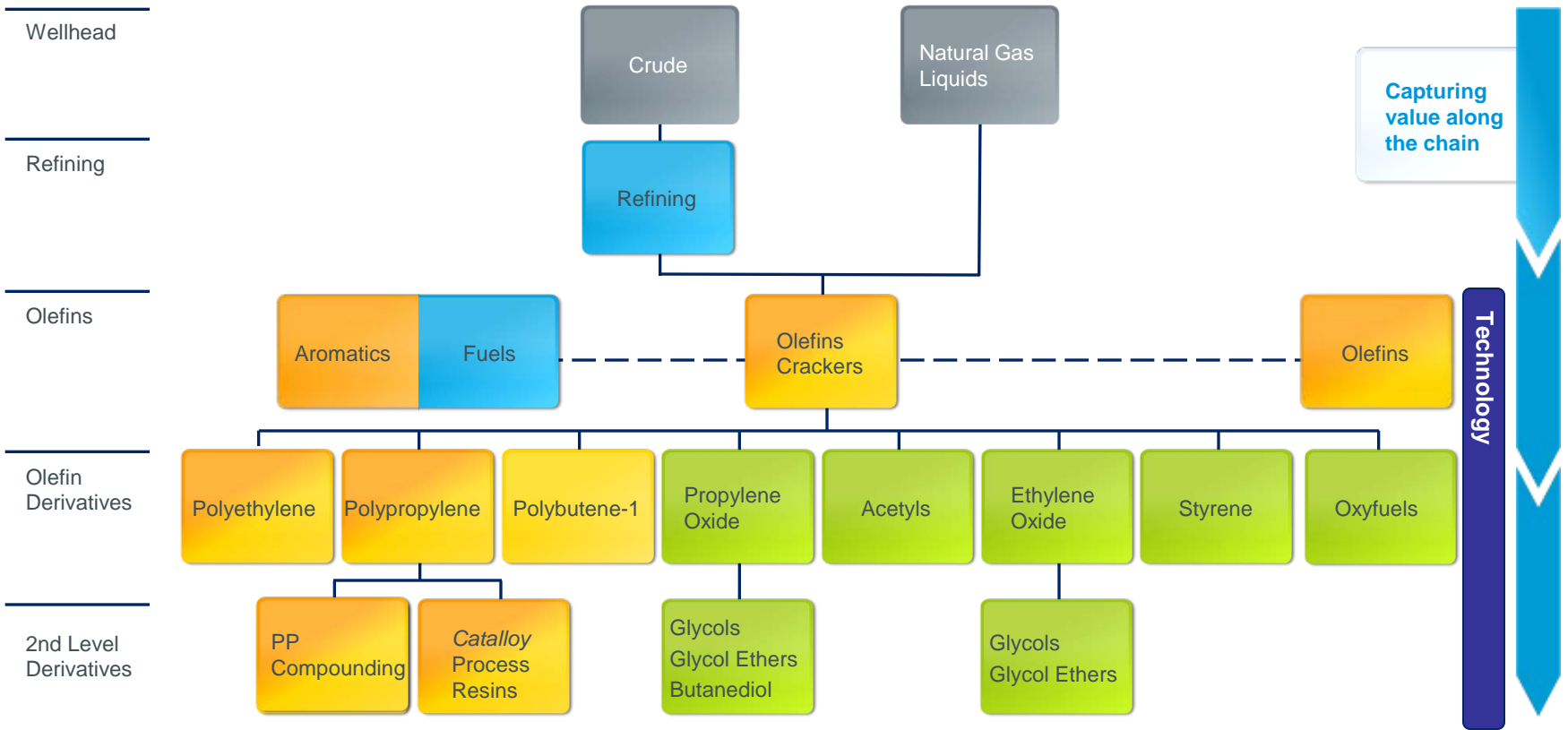
# LYB Operates With a Simple Direct Back to Basics Strategy



## Results:

- Top decile safety performance
- Fixed costs – flat to down
- Top priority – existing assets
- Advantaged growth

# Diversified and Vertically Integrated Portfolio



● Olefins & Polyolefins Americas

● Olefins & Polyolefins Europe Asia & International

● Intermediates & Derivatives

● Refining

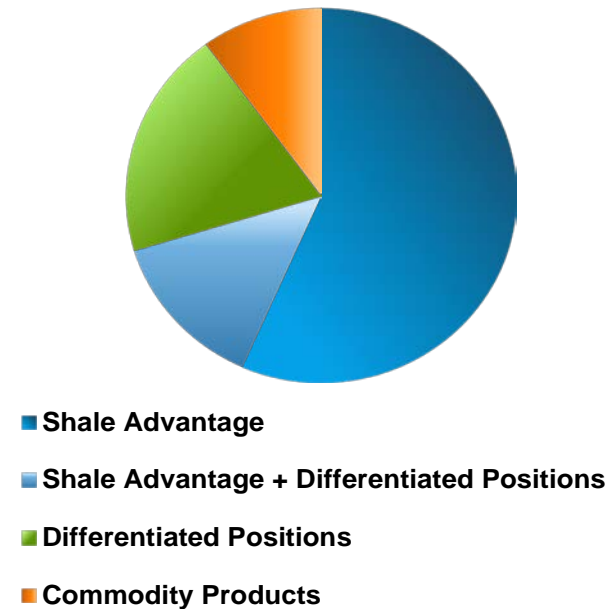
● Technology

# Our Businesses Benefit from Shale Advantage and Differentiated Positions



<b>Shale Advantage</b>	<b>U.S. Olefins Chain</b> <ul style="list-style-type: none"> <li>• U.S. ethylene</li> <li>• U.S. polyethylene</li> <li>• EO &amp; EG</li> </ul>
<b>Shale Advantage &amp; Differentiated Positions</b>	<ul style="list-style-type: none"> <li>• Oxyfuels</li> <li>• C4 chemicals</li> <li>• Acetyls</li> </ul>
<b>Differentiated Positions</b>	<ul style="list-style-type: none"> <li>• Propylene oxide and derivatives</li> <li>• Polypropylene compounding and Polybutene-1</li> <li>• Technology segment</li> <li>• Joint ventures</li> <li>• <i>Catalloy</i></li> </ul>
<b>Commodity Products</b>	<ul style="list-style-type: none"> <li>• European olefins and polyolefins</li> <li>• Refined products</li> <li>• Styrene</li> <li>• U.S. polypropylene</li> </ul>

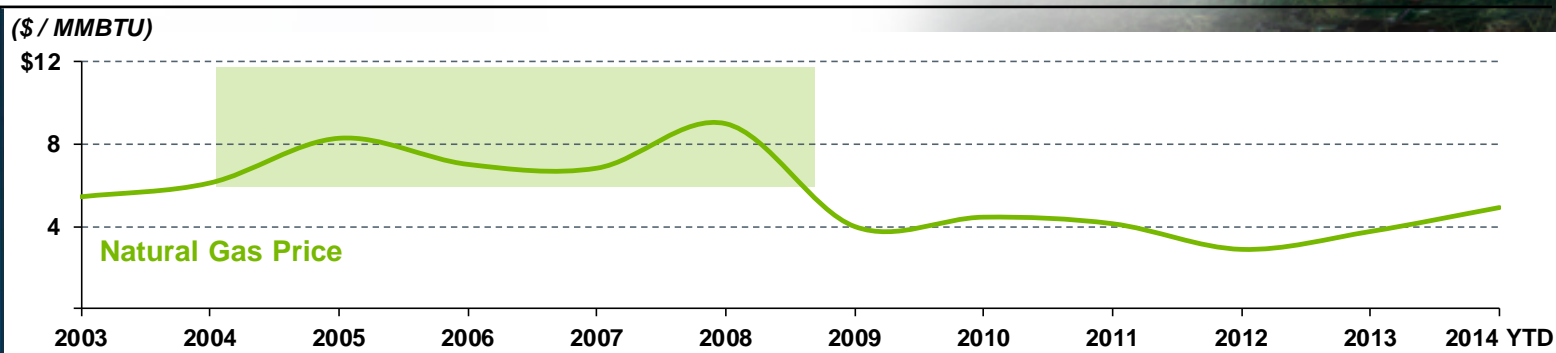
## 2013 EBITDA<sup>(1)</sup>



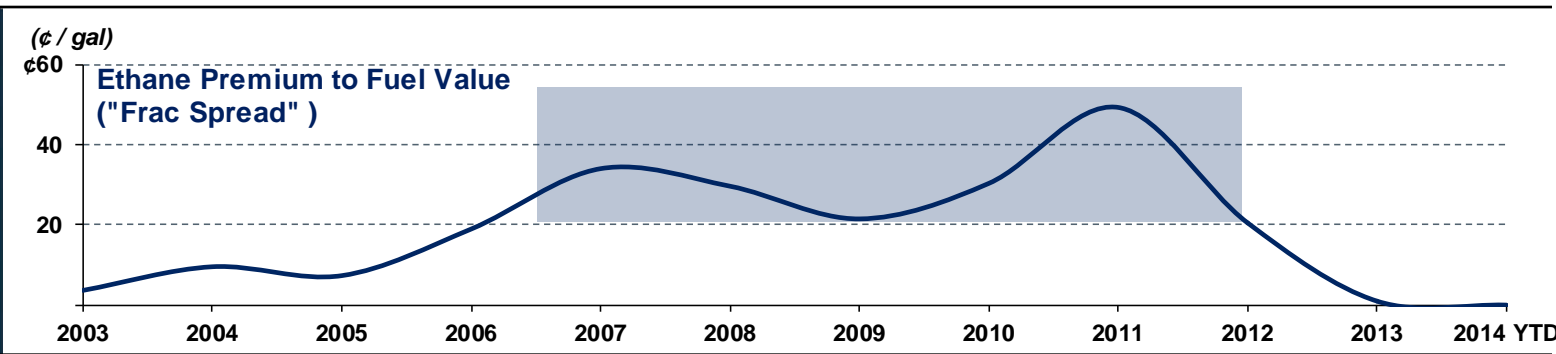
(1) EBITDA presented in this chart excludes “other”, which includes items not allocated to the segments. U.S. polyethylene benefits from shale gas advantage and is therefore included in the “Shale advantage” portion of the chart rather than the “commodity products” portion.

# Evolution of Shale Gas Value Chain


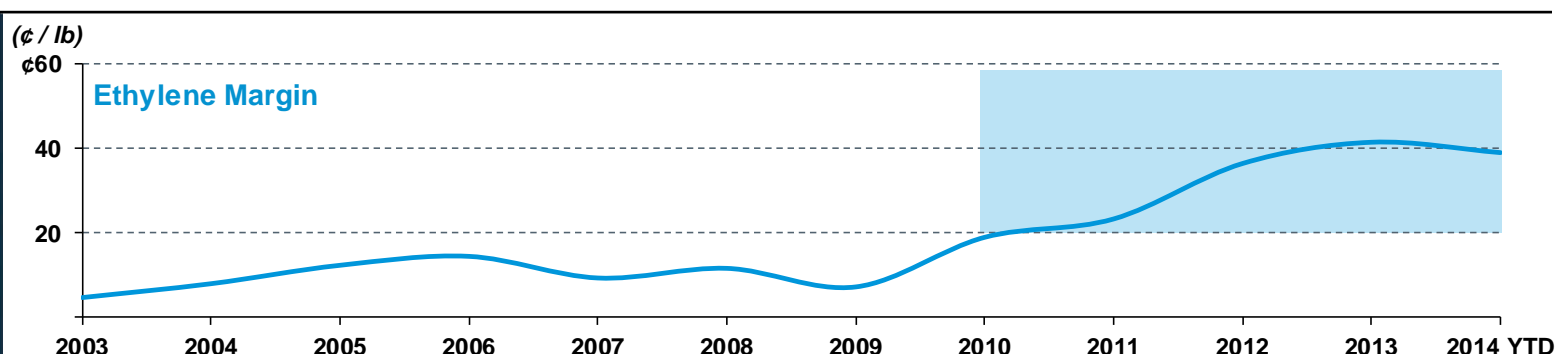
**Upstream**  
(Natural Gas E&P)

**Midstream**  
(Fractionation & Pipelines)

**Chemicals**  
(Ethylene Crackers)

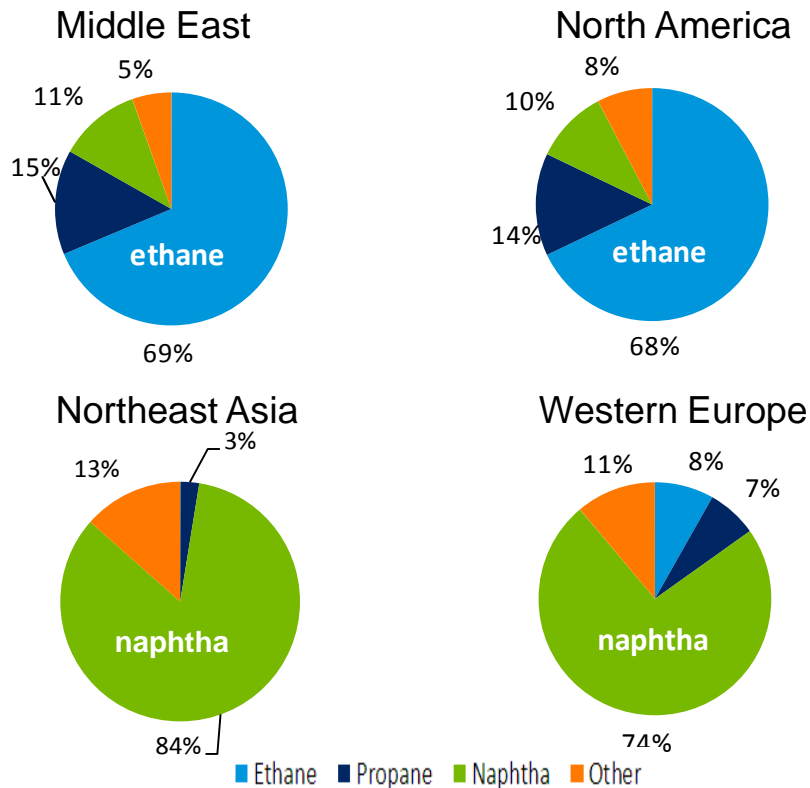
Source: Third party consultants. 2014YTD as of April 2014.



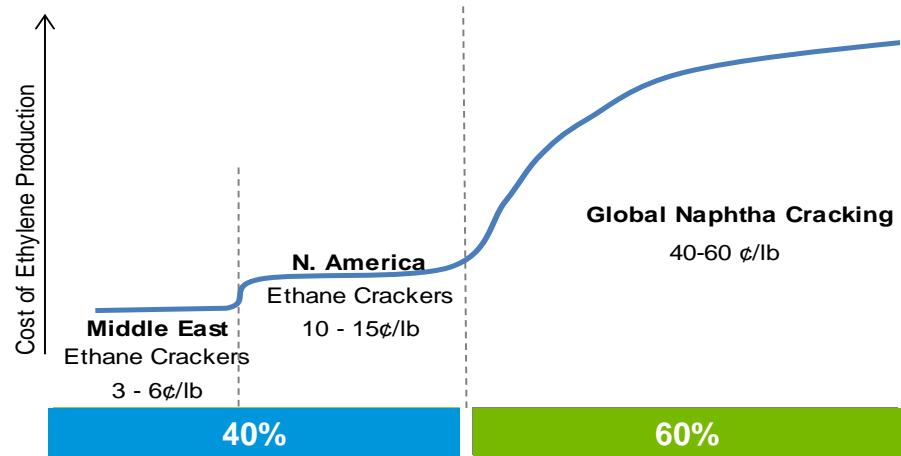
# Low Cost Ethane Has Improved North American Competitiveness



## Feedstock Mix by Region



## Global Cost of Ethylene Curve



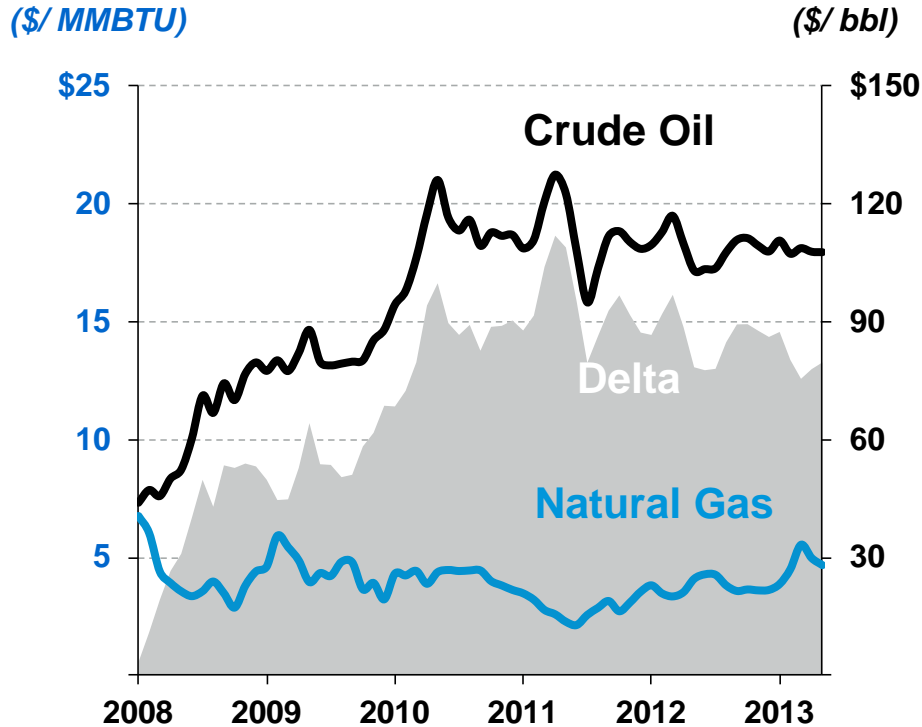
- U.S. cost of ethylene production, at 10-15 ¢/lb, competes with Middle Eastern production
- Europe and Asia still dependent on higher cost naphtha

Source: Third party consultants and LYB estimates.

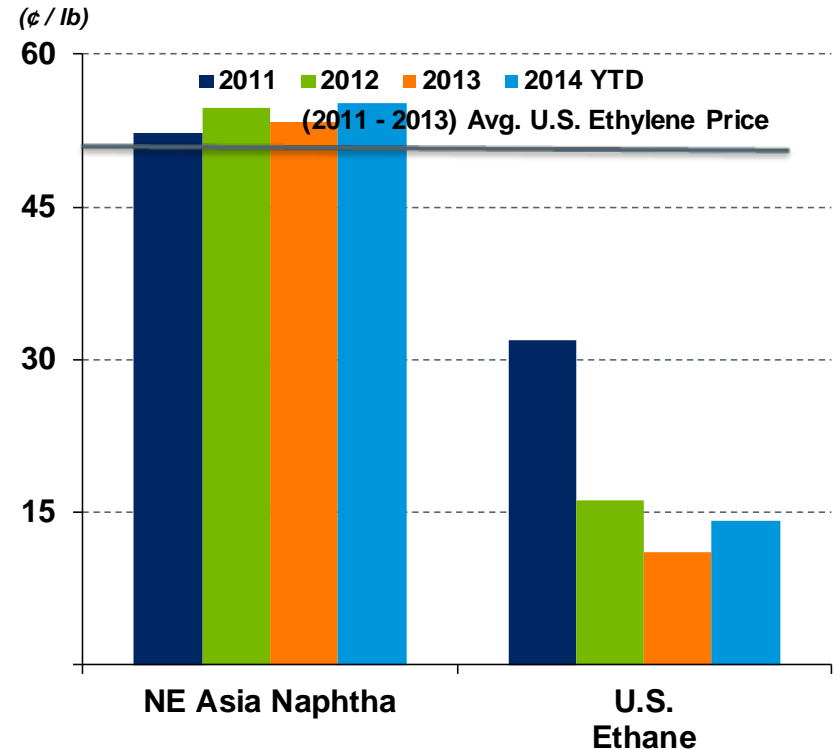
# Global Market – Naphtha Crackers Set The Price



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



## Cost of Ethylene Production

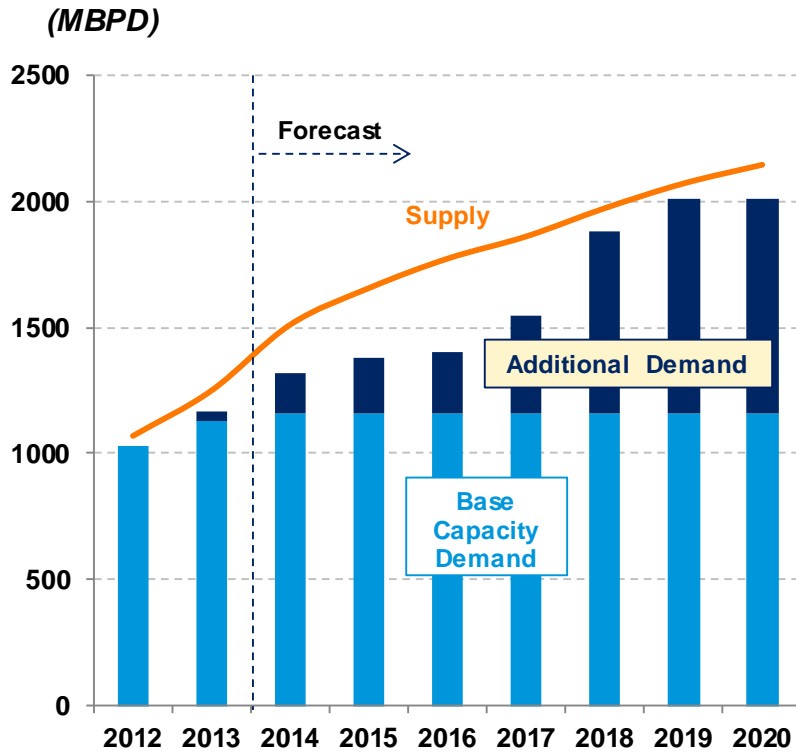


U.S. shale gas revolution is a significant driver of profitability in North American Olefins and Polyolefins and Intermediates and Derivatives segments

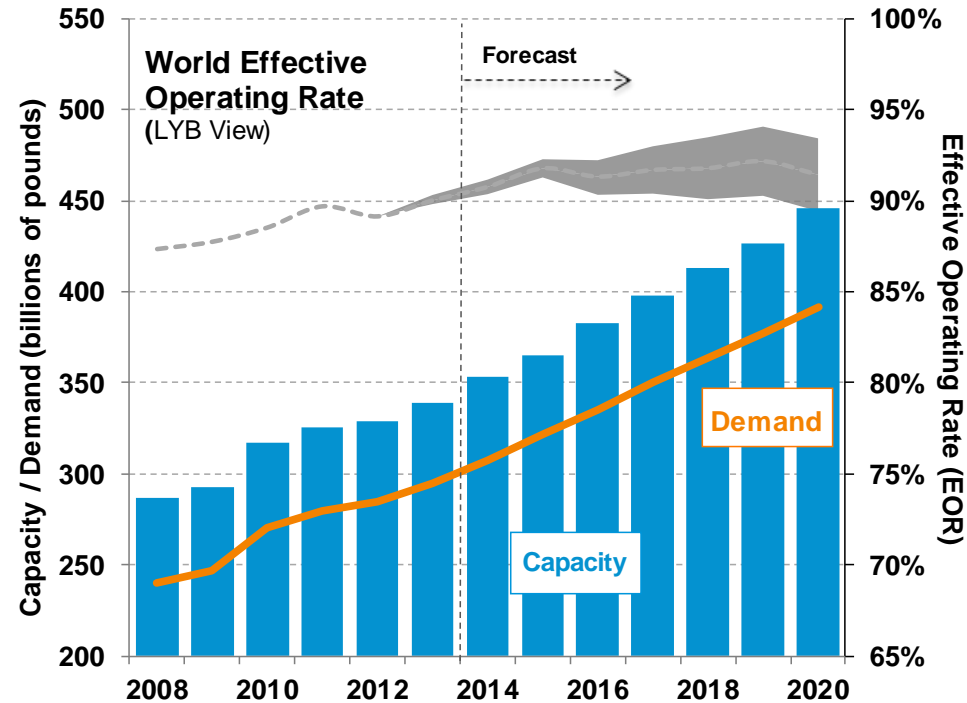
Sources: LYB estimates, third party consultants. Crude oil and natural gas data updated through April 2014.

# Favorable Supply/Demand Balances

## U.S. Ethane Supply/Demand



## Ethylene Global Operating Rates



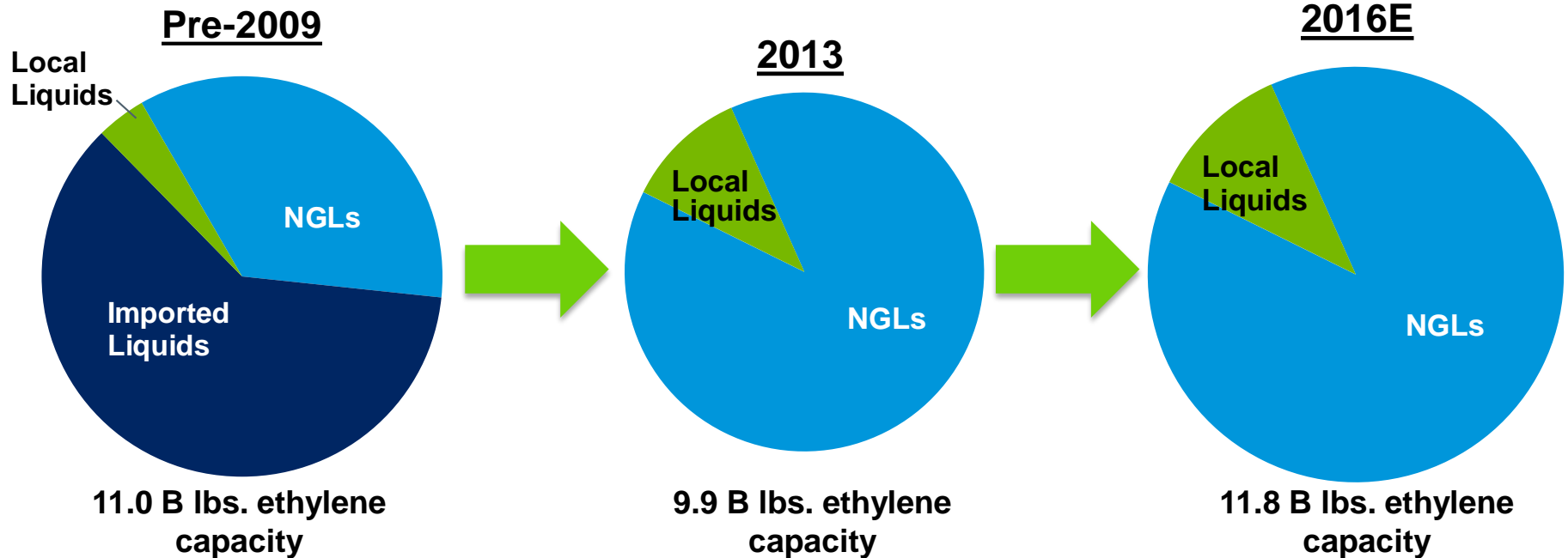
- Ethane production is expected to continue exceeding demand
- N. America ethylene industry effective operating rate ~ 95% in 2013

Source: Third party consultants and LYB estimates.

# O&P – Americas: Feedstock Flexibility Boosts Profitability



## LYB U.S. Ethylene Cracker Feedstock Flexibility



~ 90% of ethylene production in 2013 from NGLs, and almost 100% from U.S. sourced feedstocks

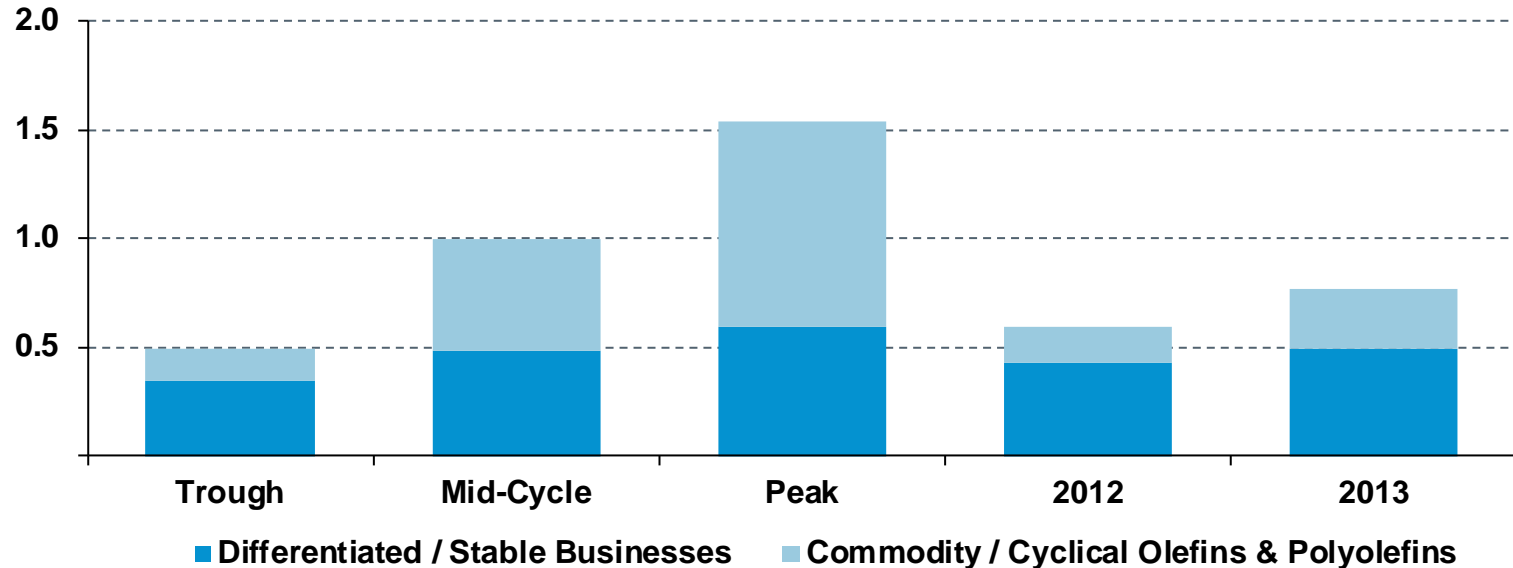
Source: LYB.

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

# O&P – EAI: Driven by 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.

# Focused on Restructuring and Improved Operations

**Focus business management processes**

**Segment markets and customers**

**Simplify supply chain processes**

**Improve feedstock purchasing**



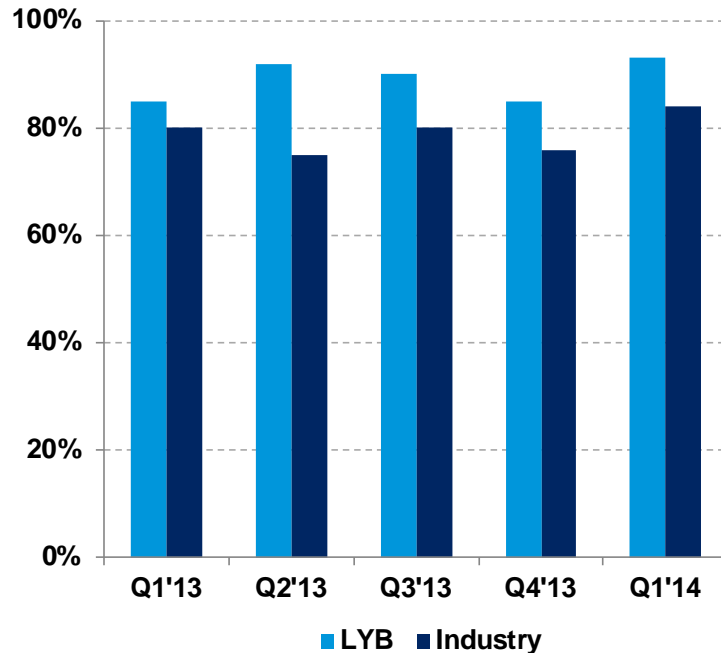
## Results

- Centralized organization
- Shuttered non-profitable assets
- Upgraded product mix
- Increased advantaged raw material consumption
- Operating plants above industry average operating rates

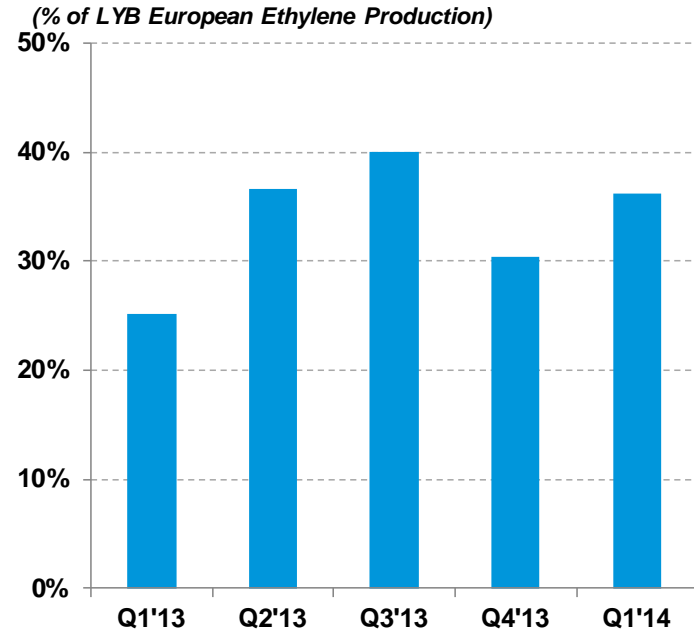
# The European Olefins Market is Difficult but LYB Has Generated Profit



## West Europe Olefins Operating Rate



## LYB Advantaged Raw Materials



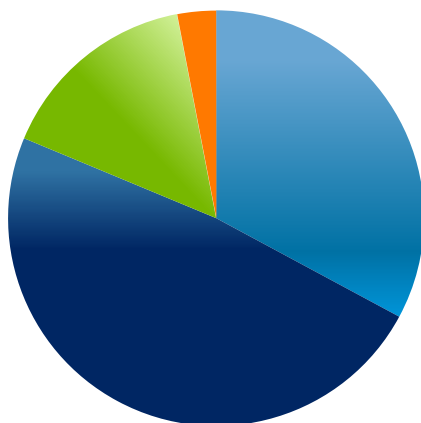
- LYB has captured value through both:
  - Above industry operating rates
  - Processing cost advantaged raw materials

Source: Third party consultants and LYB estimates.

# I&D: Key Businesses Advantages

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

## 2011 – 2013 Average Intermediates & Derivatives EBITDA<sup>(1)</sup>



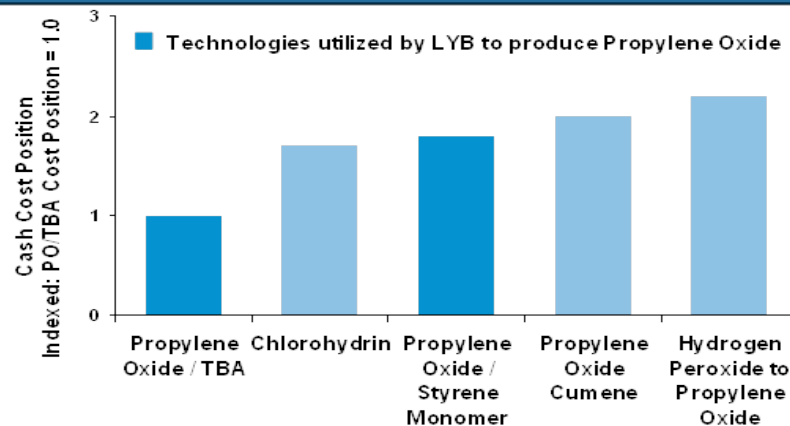
- Proprietary Technology
- Proprietary Technology + Natural gas opportunities
- Natural gas and NGL opportunities
- Undifferentiated

(1) EBITDA, as presented in this chart, excludes intrasegment eliminations.

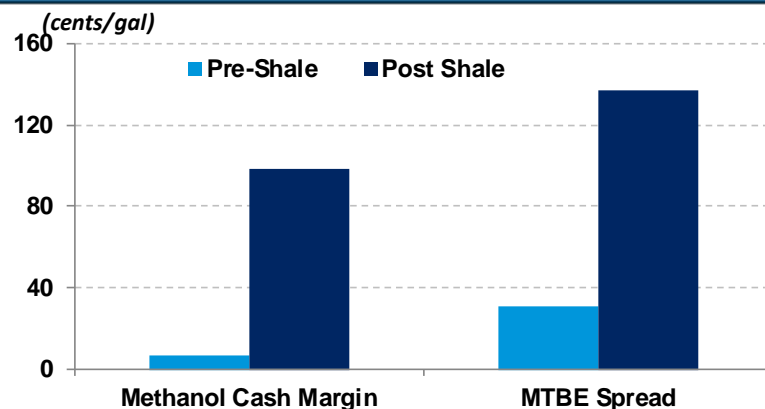
(2) Source: Economics of PO technologies are based on third party consultants and 2012 LYB data and estimates.

(3) Pre-shale refers to year 2000 while post-shale refers to year 2012.

## Economics of PO Technologies<sup>(2)</sup>



## I&D Benefits from Shale<sup>(3)</sup>

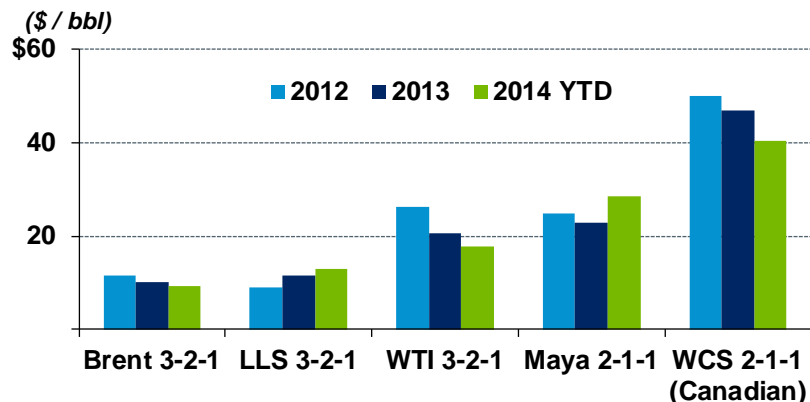




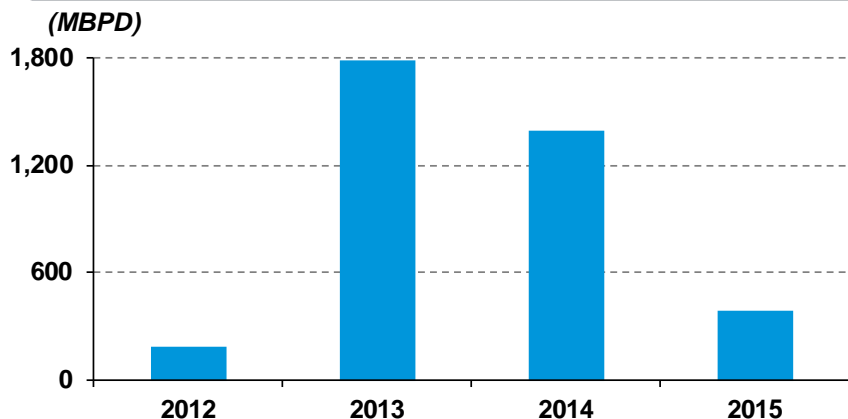
# Refining: Profitability Has Been Driven by Geography and Complexity



## Refining Spreads



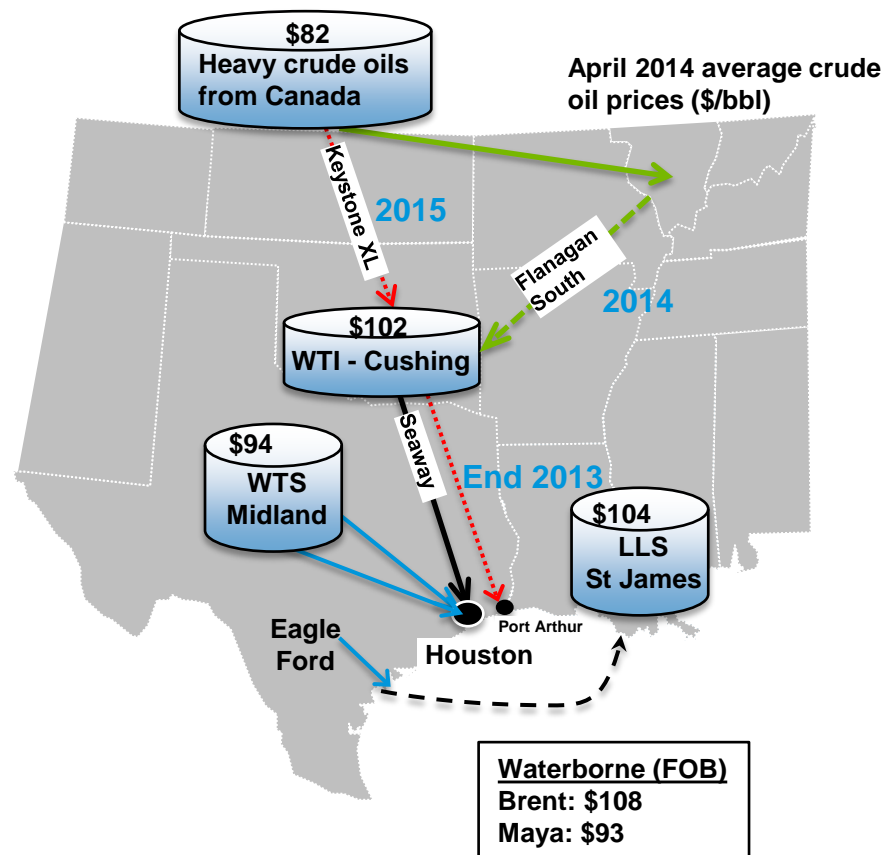
## Pipeline Capacity Increase



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. 2014 YTD as of April 2014.

## New Pipeline Capacity to Houston



# Cash Deployment Hierarchy



		Current Status	Comments
Foundation	Base Capex	~ \$800 - \$900 million/yr	<ul style="list-style-type: none"> <li>• First priorities for cash</li> </ul>
	Interest	~\$375 million/yr <sup>(1)</sup>	
	Interim Dividend	\$0.70/share per quarter	
Discretionary Opportunities	Growth Capex	~\$750 million avg. 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) Interest expense includes interest on the \$1 billion bond issued in February 2014.

# 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	~ \$1,700 Million	~ \$1,200 – 1,400 Million
Possible/ Developing Growth Projects	~ \$400 Million	~ \$100 - \$175 Million

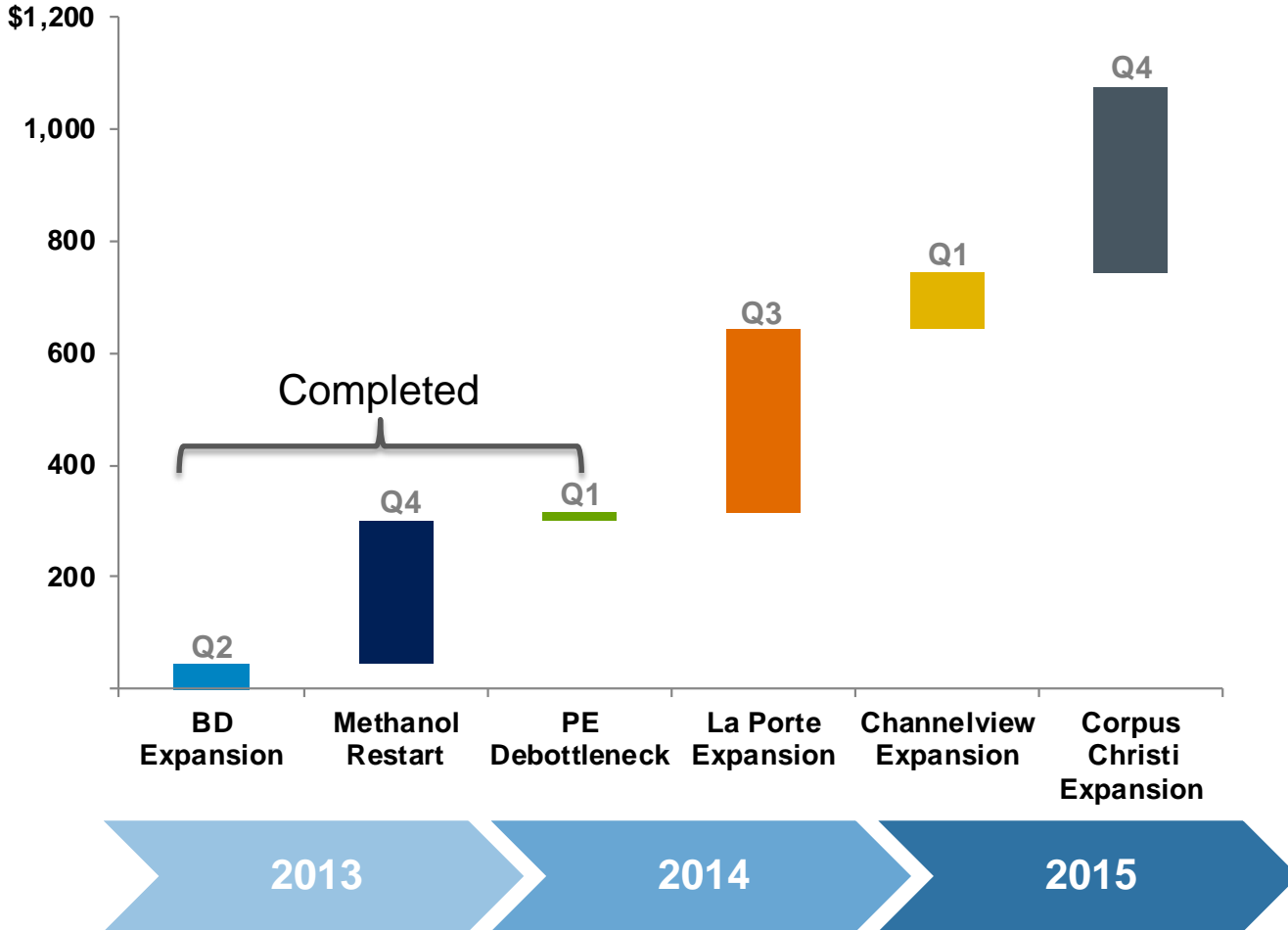
- 2012 - 2013, spending ~ \$350 million
- By end of 2013, pre-tax earnings of ~ \$300 - \$350 million from completed growth and improvement programs at 2013 industry conditions

(1) Costs are based on company estimates and earnings values are based on FY2013 industry benchmark margins.

# Projects Annual Potential Values & Completion Timeline



Annual Potential Value<sup>(1)</sup>  
(\$ Million/ yr)



1) Annual potential values are based on FY 2013 industry benchmark margins.

# Summary



- Leading chemical company with a “Back to Basics” strategy and strong integrated portfolio
- Advantaged by proprietary technology and North American shale revolution
- Growth program bearing results now
- Strong cash flow drives shareholder return:
  - Dividend growth
  - Share repurchase



Appendix

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# 2013 – 2014 Reconciliation of Segment Information to Consolidated Financial Information



## Reconciliation of Segment Information to Consolidated Financial Information

(Millions of U.S. dollars)

### Sales and other operating revenues:

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

	2013					2014
	Q1	Q2	Q3	Q4	Total	Q1
\$	3,244	\$ 3,251	\$ 3,315	\$ 3,279	\$ 13,089	\$ 3,357
	3,800	3,708	3,594	3,583	14,685	3,778
	2,282	2,217	2,452	2,521	9,472	2,429
	2,468	3,077	3,177	2,976	11,698	2,756
	134	132	124	142	532	136
	(1,259)	(1,282)	(1,510)	(1,363)	(5,414)	(1,321)
<b>\$</b>	<b>10,669</b>	<b>\$ 11,103</b>	<b>\$ 11,152</b>	<b>\$ 11,138</b>	<b>\$ 44,062</b>	<b>\$ 11,135</b>

### Operating income (loss):

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

\$	821	\$ 872	\$ 759	\$ 801	\$ 3,253	\$ 656
	93	189	78	17	377	225
	323	285	371	321	1,300	316
	(17)	(16)	(37)	92	22	86
	50	39	35	33	157	60
	(3)	(5)	1	--	(7)	(3)
<b>\$</b>	<b>1,267</b>	<b>\$ 1,364</b>	<b>\$ 1,207</b>	<b>\$ 1,264</b>	<b>\$ 5,102</b>	<b>\$ 1,340</b>

### Depreciation and amortization:

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

\$	75	\$ 69	\$ 73	\$ 76	\$ 293	\$ 73
	77	76	78	56	287	70
	48	50	50	56	204	55
	36	37	45	42	160	42
	17	20	16	22	75	16
	--	2	--	--	2	--
<b>\$</b>	<b>253</b>	<b>\$ 254</b>	<b>\$ 262</b>	<b>\$ 252</b>	<b>\$ 1,021</b>	<b>\$ 256</b>

### EBITDA: <sup>(a)</sup>

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

\$	898	\$ 951	\$ 841	\$ 883	\$ 3,573	\$ 736
	225	295	204	115	839	356
	373	338	427	354	1,492	375
	20	20	8	134	182	129
	66	59	52	55	232	76
	3	(11)	(1)	2	(7)	(4)
<b>\$</b>	<b>1,585</b>	<b>\$ 1,652</b>	<b>\$ 1,531</b>	<b>\$ 1,543</b>	<b>\$ 6,311</b>	<b>\$ 1,668</b>

### Capital, turnarounds and IT deferred spending:

Olefins & Polyolefins - Americas  
 Olefins & Polyolefins - Europe, Asia, International  
 Intermediates & Derivatives  
 Refining  
 Technology  
 Other  
 Total  
 Deferred charges included above  
 Continuing Operations

\$	122	\$ 122	\$ 218	\$ 183	\$ 645	\$ 231
	63	46	44	76	229	33
	106	141	119	77	443	45
	93	67	36	13	209	32
	7	6	7	10	30	2
	--	5	(1)	1	5	--
	391	387	423	360	1,561	343
	--	--	--	--	--	--
<b>\$</b>	<b>391</b>	<b>\$ 387</b>	<b>\$ 423</b>	<b>\$ 360</b>	<b>\$ 1,561</b>	<b>\$ 343</b>

(a) See slide # 24 for EBITDA calculation.

# 2013 – 2014 Reconciliation of EBITDA to Income from Continuing Operations



## EBITDA Calculation

<u>(Millions of U.S. dollars)</u>	2013					2014
	Q1	Q2	Q3	Q4	Total	Q1
Net income attributable to the Company shareholders	\$ 901	\$ 929	\$ 853	\$ 1,174	\$ 3,857	\$ 945
Net income (loss) attributable to non-controlling interests	(1)	(2)	(2)	1	(4)	(1)
(Income) loss from discontinued operations, net of tax	6	(4)	3	2	7	(1)
<b>Income from continuing operations</b>	<b>906</b>	<b>923</b>	<b>854</b>	<b>1,177</b>	<b>3,860</b>	<b>943</b>
Provision for income taxes	357	410	339	30	1,136	383
Depreciation and amortization	253	254	262	252	1,021	256
Interest expense, net	69	65	76	84	294	86
<b>EBITDA</b>	<b>\$ 1,585</b>	<b>\$ 1,652</b>	<b>\$ 1,531</b>	<b>\$ 1,543</b>	<b>\$ 6,311</b>	<b>\$ 1,668</b>



# 2011 – 2012 Reconciliation of Segment Information to Consolidated Financial Information



## Reconciliation of Segment Information to Consolidated Financial Information

(Millions of U.S. dollars)

	2011	2012
<b>Sales and other operating revenues:</b>		
Olefins & Polyolefins - Americas	\$ 14,880	\$ 12,934
Olefins & Polyolefins - Europe, Asia, International	15,591	14,521
Intermediates & Derivatives	9,500	9,658
Refining	13,706	13,291
Technology	506	498
Other	(6,000)	(5,550)
Continuing Operations	<u>\$ 48,183</u>	<u>\$ 45,352</u>
<b>Operating income (loss):</b>		
Olefins & Polyolefins - Americas	\$ 1,855	\$ 2,650
Olefins & Polyolefins - Europe, Asia, International	435	127
Intermediates & Derivatives	1,156	1,430
Refining	809	334
Technology	107	122
Other	(25)	13
Continuing Operations	<u>\$ 4,337</u>	<u>\$ 4,676</u>
<b>Depreciation and amortization:</b>		
Olefins & Polyolefins - Americas	\$ 246	\$ 281
Olefins & Polyolefins - Europe, Asia, International	262	285
Intermediates & Derivatives	186	194
Refining	153	148
Technology	84	73
Other	-	2
Continuing Operations	<u>\$ 931</u>	<u>\$ 983</u>
<b>EBITDA: (a)</b>		
Olefins & Polyolefins - Americas	\$ 2,137	\$ 2,968
Olefins & Polyolefins - Europe, Asia, International	865	548
Intermediates & Derivatives	1,410	1,621
Refining	977	481
Technology	191	197
Other	(111)	(7)
Continuing Operations	<u>\$ 5,469</u>	<u>\$ 5,808</u>
<b>Capital, turnarounds and IT deferred spending:</b>		
Olefins & Polyolefins - Americas	\$ 425	\$ 468
Olefins & Polyolefins - Europe, Asia, International	235	254
Intermediates & Derivatives	101	159
Refining	224	136
Technology	26	43
Other	17	5
Total	<u>1,028</u>	<u>1,065</u>
Deferred charges included above	(7)	(5)
Continuing Operations	<u>\$ 1,021</u>	<u>\$ 1,060</u>

(a) See slide # 26 for EBITDA calculation.

# 2011 – 2012 Reconciliation of EBITDA to Income from Continuing Operations



## EBITDA Calculation

---

(Millions of U.S. dollars)

	<u>2011</u>	<u>2012</u>
Net income attributable to the Company shareholders	\$ 2,147	\$ 2,848
Net loss attributable to non-controlling interests	(7)	(14)
(Income) loss from discontinued operations, net of tax	<u>332</u>	<u>24</u>
<b>Income from continuing operations</b>	<b>2,472</b>	<b>2,858</b>
Provision for income taxes	1,059	1,327
Depreciation and amortization	931	983
Interest expense, net	<u>1,007</u>	<u>640</u>
<b>EBITDA</b>	<b><u>\$ 5,469</u></b>	<b><u>\$ 5,808</u></b>

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# First Quarter, 2014 Highlights



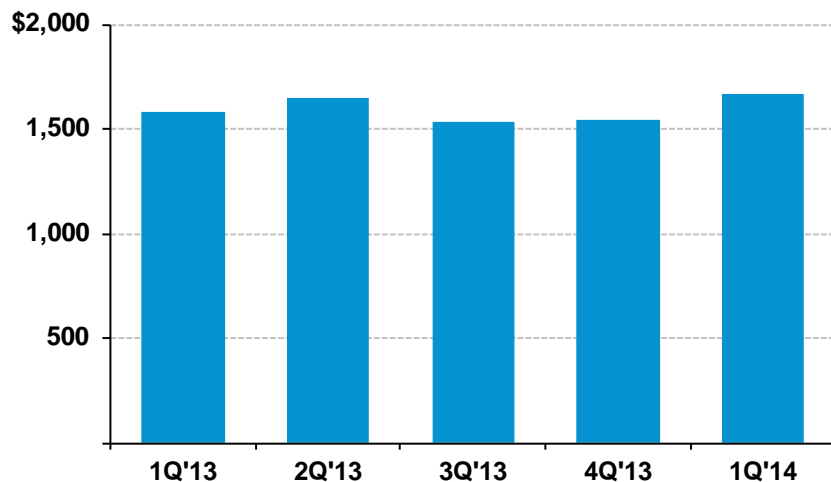
<i>(\$ in millions, except per share data)</i>	1Q'14	4Q'13	1Q'13
EBITDA	\$1,668	\$1,543	\$1,585
Income from Continuing Operations	\$943	\$1,177	\$906
Diluted Earnings (\$ / share) from Continuing Operations	\$1.72	\$2.11	\$1.56

**LTM EBITDA - \$6,394 million**

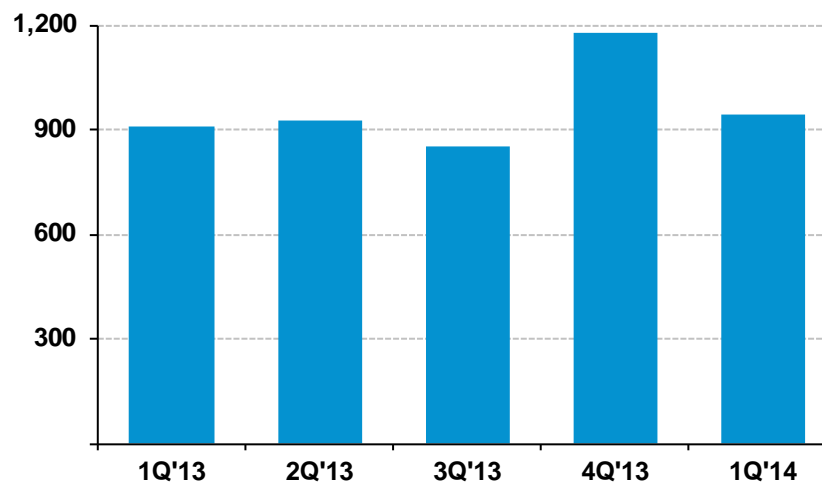
**LTM EPS – \$6.93 per share**

*(\$ in millions)*

## EBITDA



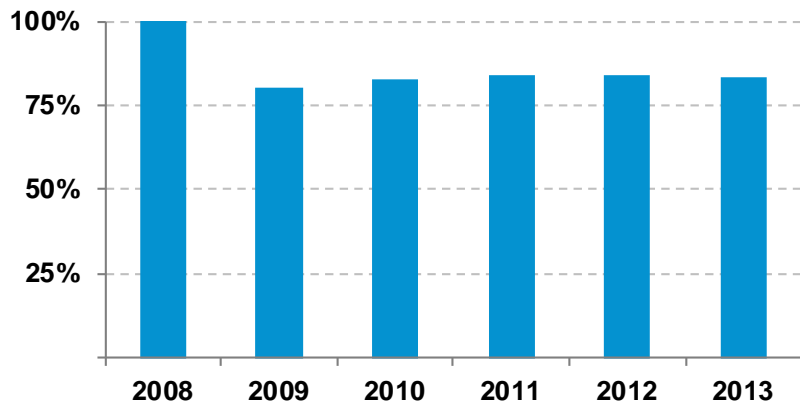
## Income from Continuing Operations



# Key Financial Statistics

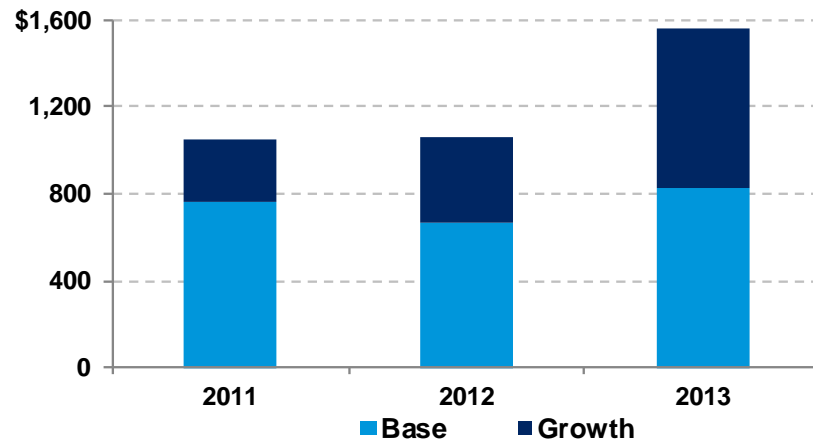
## Indexed Cash Fixed Cost<sup>(1)</sup>

(Indexed to 2008)



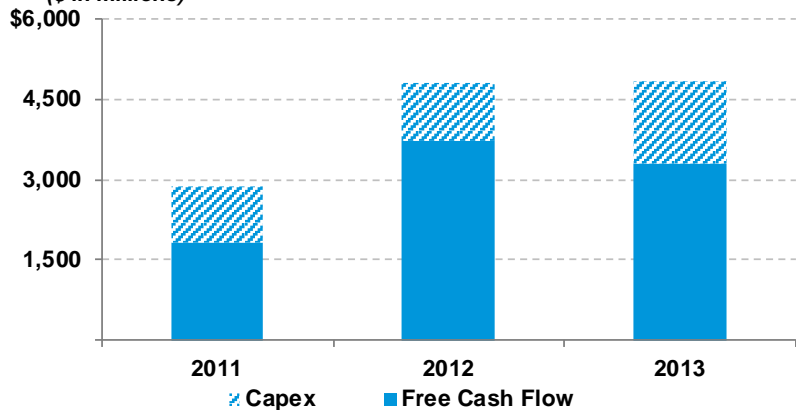
## Capital Expenditures

(\$ in millions)



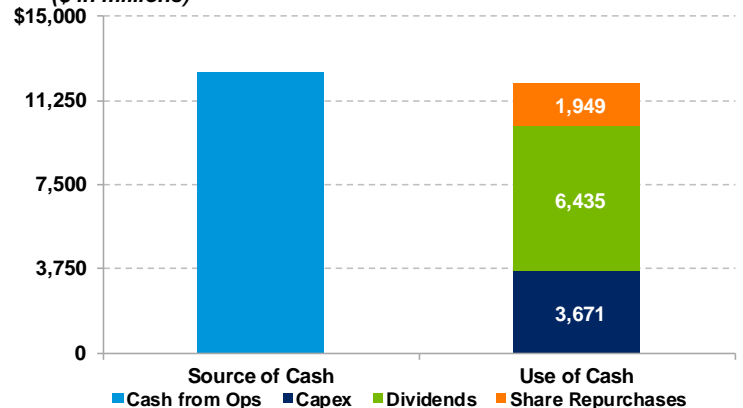
## Free Cash Flow<sup>(2)</sup>

(\$ in millions)



## 2011 – 2013 Cash Deployment

(\$ in millions)

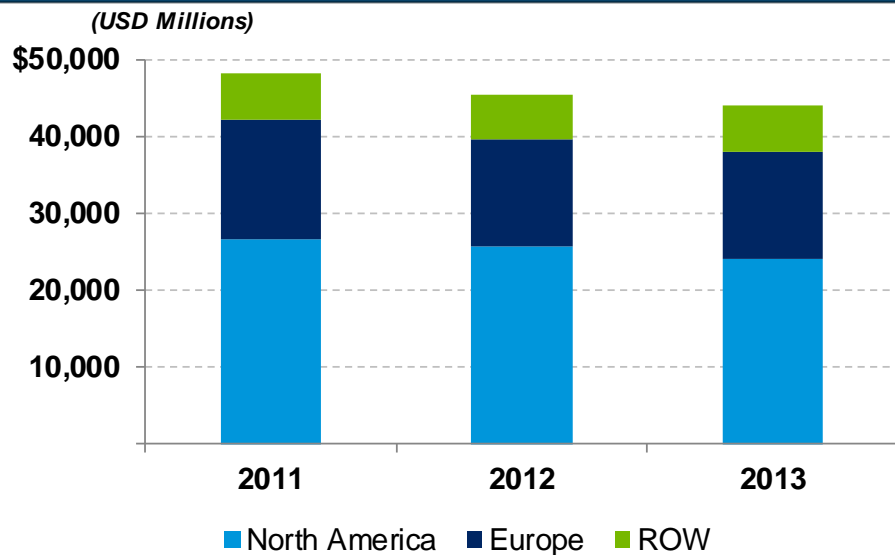


1) Cash fixed costs include costs related to compensation, travel, insurance, third party services, maintenance, marketing, selling, and administration; 2) Free Cash Flow = net cash provided by operating activities – capex

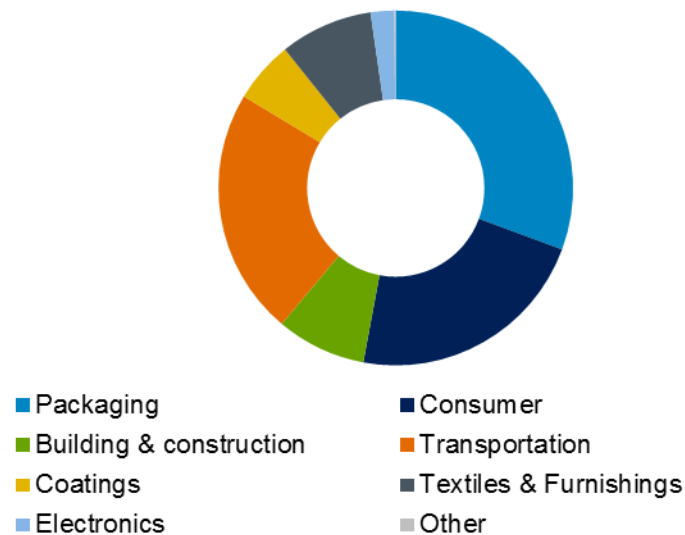
# LYB Has Diverse Footprint and End Uses



## Sales by Region



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



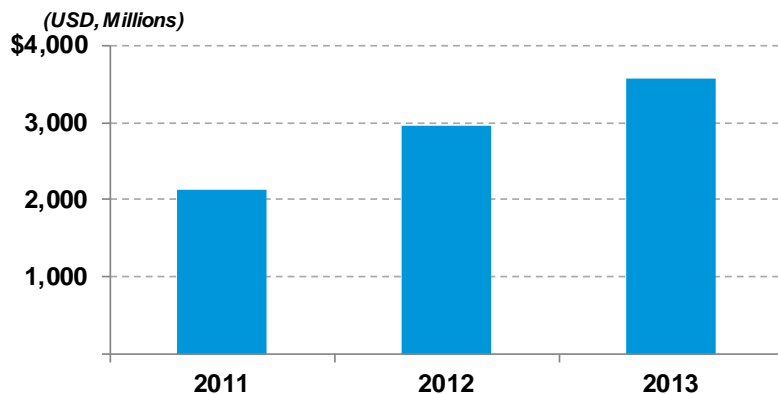
N. America sales represent ~ 55% of total company revenues

(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.

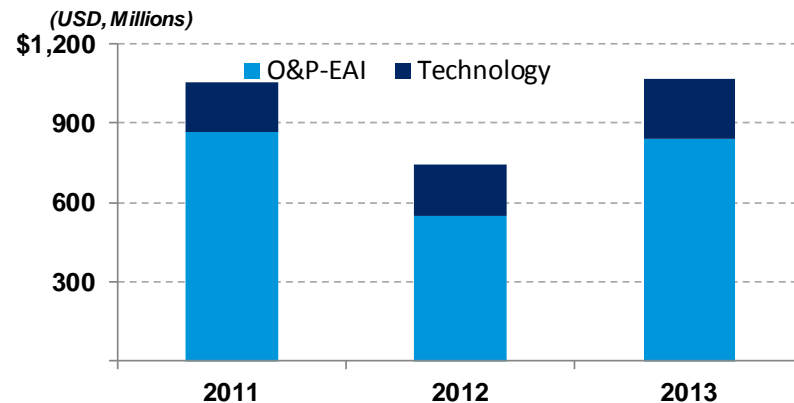
# Segment Annual EBITDA Profile



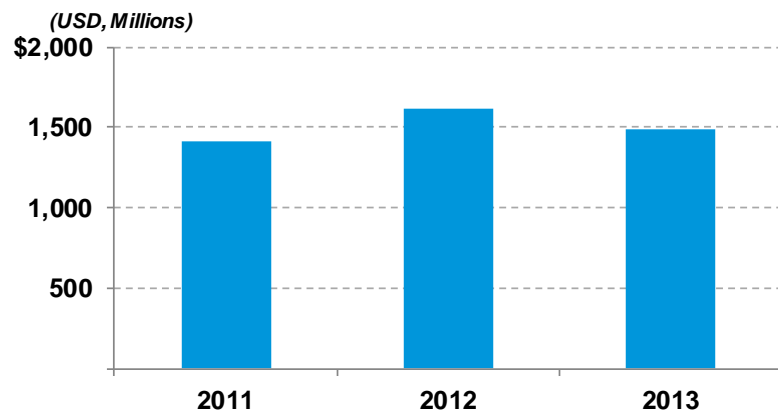
## O&P - Americas



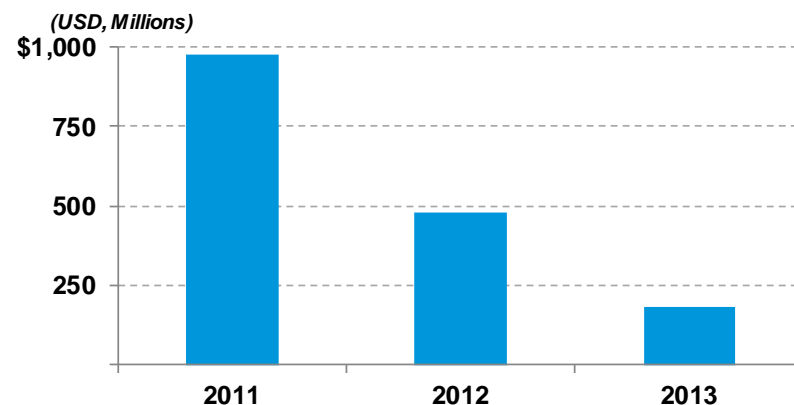
## O&P – EAI & Technology



## Intermediates & Derivatives



## Refining



# Olefins & Polyolefins – Americas

- **Largest light olefins producer in North America**
  - Significant competitive advantage with scale, feedstock supply flexibility and vertical integration
- **Third largest polyethylene producer in North America**
  - Broad product portfolio
- **Largest polypropylene producer in North America**
  - High degree of integration
  - *Catalloy* adds specialty component

## Product Capacity Position and Footprint

<b>Product</b>	<b>Facilities</b>	<b>Capacity<sup>(1)</sup></b>	<b>NA Ranking</b>
Light Olefins	6 Crackers	9.9 Bn lbs (ethylene)	#1
Polypropylene	4 sites <sup>(2)</sup>	4.4 Bn lbs	#1
Polyethylene	6 sites	5.9 Bn lbs	#3



**Strong Capacity Position + 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, 2013. Light olefins capacity based on combined ethylene and propylene capacities.

(2) - Includes Indelpro JV.

# Olefins & Polyolefins - Europe, Asia, International



- **Moderate olefins capacity position**
  - Medium-size light olefins player in Western Europe
- **Large scale polymer capacity position**
  - Largest polyethylene producer in Western Europe
    - #1 high density polyethylene capacity
    - #3 low density polyethylene capacity
  - Largest polypropylene producer in Western Europe with *Catalloy* adding to differentiation capability
  - Largest PP Compounds producer globally
- **Significant Joint Ventures**

## Product Capacity Position and Footprint

Product	Facilities	Capacity <sup>(1)</sup>	W.E. Ranking
Light Olefins	5 Crackers (1 JV)	6.5 Bn lbs (ethylene)	#6
Butadiene	2 sites	700 Mn lbs	#3
Polypropylene	15 sites (6 JVs)	13.0 Bn lbs	#1
Polyethylene	6 sites (2 JVs)	7.0 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, 2013. Light olefins capacity based on combined ethylene and propylene capacities.



# Intermediates & Derivatives (I&D)

- **Strong propylene oxide capacity position and leader in PO technology processes**
  - #2 propylene oxide producer worldwide
- **Several products benefit from natural gas vs. crude oil**
  - Acetyls
  - Ethylene oxygenates
  - HP-Isobutylene
  - Oxyfuels

Product Capacity Position and Footprint		
Products	Facilities	Capacity <sup>(1)</sup>
Propylene Oxide	6 Sites	5.1 Bn lbs
Acetic Acid	1 Site	1.2 Bn lbs
Methanol	2 sites	440 Mn gal
Ethylene Glycol	1 Site	0.7 Bn lbs
Isobutylene	3 Site	1.4 Bn lbs
Oxyfuels	4 Sites	75,000 bbls/day
Styrene	3 Sites	5.6 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, 2013.

# 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



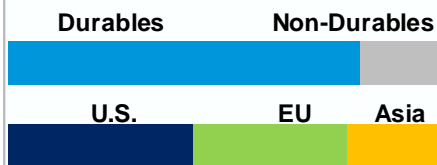
World class, high conversion, highly integrated refinery

# I&D: Globally Diversified End Uses

## Propylene Oxide & Derivatives



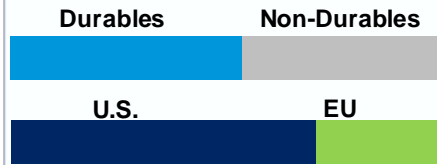
- Home and auto cushioning
- Insulation foams
- Polyester composites
- Coatings
- Automotive parts
- Spandex



## Acetyls



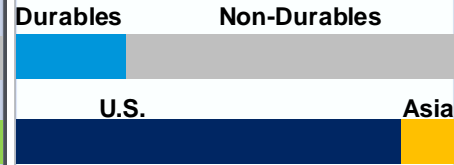
- Food packaging
- Textiles
- Coatings
- Safety glass



## 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.

# Projects Completed and Active



Project	Cost (\$Million)	Start-up	Potential Pre-Tax Earnings (\$ Million/year)
Increase Ethane Capability and Midwest debottlenecks	~\$50	2012	\$150 - \$180
EU Butadiene Expansion	~\$100	Mid 2013	\$40 - \$50
Methanol Restart	~\$180	Late 2013	\$250 - \$260
PE Debottleneck	~\$20	Early 2014	\$10 - \$20
La Porte Expansion	~\$510	Mid 2014	\$300 - \$350
Channelview Expansion	~\$200	Early 2015	\$90 - \$110
Corpus Christi Expansion	~\$600	Late 2015	\$300 - \$350
PP Compounding Growth	~ \$40	2013 - 2016	\$70 - \$90
New PE line	~ \$400	Mid 2017	\$50 - \$100
PO/TBA Joint Venture	MOU	2018	\$70 - \$90
<b>Total</b>	<b>~ \$2,100</b>		<b>~ \$1,300 - \$1,600</b>

■ Complete    
 ■ In Construction/Permit Obtained    
 ■ In Development

(1) Costs are based on recent company estimates and potential pre-tax values are based on FY 2013 industry benchmark margins.