Chemicals Renaissance - Expansion in the US Gulf Coast

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Forward-Looking Statement Disclaimer

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Who We Are

• Supplier of petrochemicals that are essential to manufacturing over 70,000 consumer and industrial products
• $15 billion in assets and $8.5 billion in annual revenue
• Trusted supplier to customers in 140 countries
• A highly educated and diverse workforce of 5,000 employees working on four continents across the globe
Our Products

K-Resin business sold in 2017
# North America Advantage

*Source: IHS Markit*

### Ethylene Cash Costs By Region

<table>
<thead>
<tr>
<th>Region</th>
<th>2017 Forecast (Crude = $56/bbl)</th>
<th>2005 (Crude = $57/bbl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle East</td>
<td>NA Ethane</td>
<td>Ethylene</td>
</tr>
<tr>
<td>NA Ethane</td>
<td></td>
<td>Ethane</td>
</tr>
<tr>
<td>NE Asia</td>
<td>NA Naphtha</td>
<td>NA Butane</td>
</tr>
<tr>
<td>W. Europe</td>
<td>NA Propane</td>
<td>SE Asia</td>
</tr>
<tr>
<td>SE Asia</td>
<td>NA Propane</td>
<td>W. Europe</td>
</tr>
<tr>
<td>North America</td>
<td>Advantage</td>
<td></td>
</tr>
</tbody>
</table>

Cumulative Ethylene Capacity, KMT

- 25,000
- 50,000
- 75,000
- 100,000
- 125,000
- 150,000
- 175,000

$ / MT

- 0
- 100
- 200
- 300
- 400
- 500
- 600
- 700
- 800
Nearly $30 Billion

Projected increase in Net Exports of U.S. chemicals (2014-2030)

Net exports of shale gas advantaged chemicals will grow due to increased chemical industry investment in the U.S. As of September 2015, $153 billion in U.S. chemical investment is planned, completed, or underway.
Industry Stands Ready to Meet Global Demand

Source: IHS Markit

2015 - 2025 demand growth 60 MM MT = 41 crackers
Preparing for Surge: PE Net Trade Flow

Source: IHS Markit

<table>
<thead>
<tr>
<th>Region</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>2,752</td>
<td>2,676</td>
<td></td>
</tr>
<tr>
<td>Middle East</td>
<td>6,915</td>
<td></td>
<td>-1,542</td>
</tr>
<tr>
<td>Africa</td>
<td>-1,717</td>
<td>-2,741</td>
<td>-3,275</td>
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<tr>
<td>Southeast Asia</td>
<td>97</td>
<td>704</td>
<td>6</td>
</tr>
<tr>
<td>South America</td>
<td>-1,352</td>
<td>-1,710</td>
<td>-2,179</td>
</tr>
<tr>
<td>Europe</td>
<td>184</td>
<td>-290</td>
<td>-1,542</td>
</tr>
<tr>
<td>Northeast Asia</td>
<td>-4,420</td>
<td>-7,351</td>
<td>-11,782</td>
</tr>
<tr>
<td>Indian Sub.</td>
<td>2,376</td>
<td>-2,706</td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>-1,674</td>
<td>-2,376</td>
<td>-2,706</td>
</tr>
</tbody>
</table>

Thousand Metric Ton
Preparing for Surge

- Chevron Phillips Chemical’s North America ethylene and polyethylene increases to 40%
- North America’s export to grow 9.6 million metric tons per year by 2026
USGC Petrochemicals Project

- $6 billion investment
- 1.5 million metric tons/year ethane cracker in 1st half 2018
- Two 500,000 metric tons/year PE units completed in 2017
Export Capability & Supply Chain Flexibility
What’s Ahead?

• U.S. shale resources
• Strong demand
• Chemical export growth
• Great jobs!
• Infrastructure investment
Thank you!