Petrochemical Products Markets – Olefins

Platts Inaugural Petrochemical Seminar
Williams NGL & Petchem Services
September 25, 2013
Forward-looking statements

The reports, filings, and other public announcements of The Williams Companies, Inc. (Williams) and Williams Partners L.P. (WPZ) may contain or incorporate by reference statements that do not directly or exclusively relate to historical facts. Such statements are "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. We make these forward looking statements in reliance on the safe harbor protections provided under the Private Securities Litigation Reform Act of 1995. You typically can identify forward-looking statements by various forms of words such as “anticipates,” “believes,” “seeks,” “could,” “may,” “should,” “continues,” “estimates,” “expects,” “assumes,” “forecasts,” “intends,” “might,” “goals,” “objectives,” “targets,” “planned,” “potential,” “projects,” “scheduled,” “will,” “guidance,” “outlook,” “in service date” or other similar expressions. These forward-looking statements are based on management's beliefs and assumptions and on information currently available to management and include, among others, statements regarding:

> Amounts and nature of future capital expenditures;
> Expansion and growth of our business and operations;
> Financial condition and liquidity;
> Business strategy;
> Cash flow from operations or results of operations;
> The levels of dividends to Williams stockholders and of cash distributions to WPZ unitholders;
> Seasonality of certain business components;
> Natural gas, natural gas liquids, and olefins prices, supply, and demand; and
> Demand for our services

Forward-looking statements are based on numerous assumptions, uncertainties and risks that could cause future events or results to be materially different from those stated or implied in this presentation. Many of the factors that will determine these results are beyond our ability to control or predict. Specific factors that could cause actual results to differ from results contemplated by the forward-looking statements include, among others, the following:

> Whether Williams has sufficient cash to enable it to pay current and expected levels of dividends;
> Whether WPZ has sufficient cash from operations to enable it to pay current and expected levels of cash distributions, if any, following establishment of cash reserves and payment of fees and expenses, including payments to WPZ’s general partner;
> Availability of supplies, market demand, and volatility of prices;
> Inflation, interest rates, and, in the case of Williams, fluctuation in foreign exchange and general economic conditions (including future disruptions and volatility in the global credit markets and the impact of these events on our customers and suppliers);
> The strength and financial resources of our competitors and the effects of competition;
Forward-looking statements continued

> Ability to acquire new businesses and assets and integrate those operations and assets into our existing businesses, as well as successfully expand our facilities;
> Development of alternative energy sources;
> The impact of operational and development hazards and unforeseen interruptions;
> Costs of, changes in, or the results of laws, government regulations (including safety and environmental regulations), environmental liabilities, litigation, and rate proceedings;
> Williams’ costs and funding obligations for defined benefit pension plans and other postretirement benefit plans sponsored by its affiliates;
> WPZ’s allocated costs for defined benefit pension plans and other post retirement benefit plans sponsored by its affiliates;
> Changes in maintenance and construction costs;
> Changes in the current geopolitical situation;
> Our exposure to the credit risk of our customers and counterparties;
> Risks related to strategy and financing, including restrictions stemming from our debt agreements, future changes in our credit ratings and the availability and cost of capital;
> The amount of cash distributions from and capital requirements of our investments and joint ventures in which we participate.
> Risks associated with weather and natural phenomena, including climate conditions;
> Acts of terrorism, including cybersecurity threats and related disruptions; and
> Additional risks described in our filings with the Securities and Exchange Commission (SEC).

Given the uncertainties and risk factors that could cause our actual results to differ materially from those contained in any forward-looking statement, we caution investors not to unduly rely on our forward-looking statements. We disclaim any obligations to and do not intend to update the above list or to announce publicly the result of any revisions to any of the forward-looking statements to reflect future events or developments.

In addition to causing our actual results to differ, the factors listed above may cause our intentions to change from those statements of intention set forth in this announcement. Such changes in our intentions may also cause our results to differ. We may change our intentions, at any time and without notice, based upon changes in such factors, our assumptions, or otherwise.

With respect to WPZ, limited partner interests are inherently different from the capital stock of a corporation, although many of the business risks to which we are subject are similar to those that would be faced by a corporation engaged in a similar business.

Investors are urged to closely consider the disclosures and risk factors in Williams’ and WPZ’s annual reports on Form 10-K filed with the SEC on Feb. 27, 2013, and each of our quarterly reports on Form 10-Q available from our offices or from our websites at www.williams.com and www.williamslp.com.
Agenda

> Propylene market overview:
  – US Growth vs. World Growth
  – PDH projects review
  – Williams Alberta PDH Project

> Butane as a petrochemical feedstock

> Ethane-to-ethylene potential growth limits

> How does infrastructure keep up with North American petchem growth?
  – Williams’ solutions
Balancing NGL supply & petchem demand will result in price volatility over the next decade

**Supply** develops incrementally, well-by-well, but **Demand** increments are step changes

Nat Gas Plants in US Relative To Shale Plays

- Ethylene Cracker world-scale plant size increases from 60,000 bpd to 90,000 bpd of ethane
- LPG export terminal designs increase to accommodate VLGCs
- Propane Dehydrogenation (PDH) world-scale plant size increases from 18,000 bpd to 33,000 bpd of propane

Source: EIA
Propylene supply growth driven by on-purpose investment

> North American propylene supply has declined over the last decade
  - Reduced production from refineries and steam crackers
  - Polypropylene shutdowns followed as US propylene became the highest priced in the world
  - North American propylene demand growth = 0.8% for 2000 through 2020

Source: IHS Chemical
The move to ethane cracking results in a permanent decline in propylene production

North American ethylene production can grow without propylene growth

Source: IHS

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North American propylene production growth from 2000 to 2020 = 0.8% average annual growth

Source: IHS Chemical
Propylene supply growth driven by on-purpose investment

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> Global propylene supply growth based on naphtha cracking and PDH
  - Global propylene demand growth = 4% for 2000 through 2020
  - Additional on-purpose propylene production is required to match historical growth

Source: IHS Chemical
North American share of propylene market decreases from 28% in 2000 to 15% in 2020

Source: IHS Chemical
Propylene supply growth driven by on-purpose investment

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  - Global propylene demand growth = 4% for 2000 through 2020
  - Additional on-purpose propylene production is required to match historical growth

> Propane Dehydrogenation (PDH) has become the technology choice for on-purpose propylene production
  - Shale gas production provides a surplus of natural gas liquids
  - US becomes an exporter of propane and normal butane

Source: IHS Chemical
PDH projects contribute 5 MM tons of PGP supply and up to 219,000 bpd of propane demand

<table>
<thead>
<tr>
<th>Companies</th>
<th>Propylene Capacity K MT/yr</th>
<th>Propylene Capacity MM lb/yr</th>
<th>Propane Feedstock Bpd*</th>
<th>Startup Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>PetroLogistics – Houston, TX</td>
<td>650</td>
<td>1,430</td>
<td>28,000</td>
<td>Operating</td>
</tr>
<tr>
<td>Dow Chemical – Freeport, TX</td>
<td>750</td>
<td>1,650</td>
<td>33,000</td>
<td>2015</td>
</tr>
<tr>
<td>Enterprise – Mont Belvieu, TX</td>
<td>750</td>
<td>1,650</td>
<td>33,000</td>
<td>2015</td>
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<tr>
<td>Formosa Plastics – Point Comfort, TX</td>
<td>600</td>
<td>1,320</td>
<td>26,000</td>
<td>2016</td>
</tr>
<tr>
<td>Williams – Redwater, Alberta</td>
<td>500</td>
<td>1,100</td>
<td>22,000</td>
<td>2017</td>
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<tr>
<td>Ascend – (2 plants) Chocolate Bayou, TX</td>
<td>1,000</td>
<td>2,200</td>
<td>44,000</td>
<td>2017</td>
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<tr>
<td>Dow Chemical – Freeport, TX</td>
<td>750</td>
<td>1,650</td>
<td>33,000</td>
<td>2018</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,000</strong></td>
<td><strong>11,000</strong></td>
<td><strong>219,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: IHS Chemical

* Williams’ estimate of propane feedstock at 100% utilization
Globally, major PDH growth in China, based on imported propane

<table>
<thead>
<tr>
<th>Worldwide PDH Plants</th>
<th>Number</th>
<th>Average Capacity ('000 MT)</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating</td>
<td>14</td>
<td>330</td>
<td>9 Asia/Middle East</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 Europe/Africa</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1 North America</td>
</tr>
<tr>
<td>Developing -- China</td>
<td>15</td>
<td>520</td>
<td>China</td>
</tr>
<tr>
<td>Developing -- Americas</td>
<td>7</td>
<td>560</td>
<td>5 United States</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1 Canada</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 Columbia</td>
</tr>
<tr>
<td>Developing -- Rest of the World</td>
<td>6</td>
<td>460</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>460</td>
<td></td>
</tr>
</tbody>
</table>

Source: Wood Mackenzie NGLs Service
As a petchem feedstock, propane provides an advantage to US producers

Propane: Mont Belvieu Spot vs. International Benchmarks

Source: Petral
Williams Canada – investing in multiple Alberta advantages

Capitalizing on opportunity

> Existing assets:
  - Ft. McMurray Cryo at Suncor 16 Mbpd
  - Boreal Pipeline 43 Mbpd (expandable to 125 Mbpd)
  - Redwater processing complex

> Top value drivers:
  - Aggregating more liquids from the oil sands
  - Increasing Boreal Pipeline utilization
  - Recovering ethane and ethylene
  - Converting propane to propylene
Williams Alberta PDH project – different from the other PDH projects

- First facility of its kind in Canada
- Will produce 1.1 billion pounds of polymer grade propylene annually
- Exploring opportunities that would see a propylene derivative plant built in close proximity to the PDH
  - PGP would be sold under a long term fee-type arrangement to reduce risk profile of PDH project
- Expected in-service 2Q 2017
  - Relaxed construction schedule supports capital cost control
  - Potential to match PDH execution schedule and start-up date with derivative plant
North America will continue to develop PDH projects based on growing propane supplies

> North American PDH production should be low cost incremental propylene to the world market
  – Incremental propylene supply will be on-purpose production from new PDH plants
  – North American propane surplus has two options: export or PDH consumption
  – Propane transportation cost > polypropylene transportation cost

> North American PDH expansion plans are minor portion of global supply picture
  – North American PDH projects = 7 out of 28 global projects
  – North American market share of global propylene supply:
    – 2000 = 28%
    – 2020 = 15%

> Propylene pricing will increasingly correlate with US propane prices
  – PDH will become the swing producer, so PDH economics will impact spot pricing
  – Higher valued use for propane in North America should be PDH production over export
Does butane have the same potential as propane as a petrochemical feedstock?

> No announced petchem projects in North America based on butane
  - Normal butane oversupply in North America will be proportional to propane oversupply (no traditional domestic growth of propane or butane)
  - Normal butane is starting from a higher value compared to propane
  - Will butane price down to become competitive with propane?

> China is building PDH projects based upon butane economics
  - Some PDH capacity in China may be based upon mixed C3/C4 feed, normal butane feed or mixed C4 (isobutane + normal butane) feed
Ethylene demand growth: domestic vs. global

> Ethylene demand growth follows GDP growth
  - <1.0 in mature economies, like the US and Western Europe
  - >1.0 in developing economies, like China and India

> Global GDP growth of 3.8% = 6 MM metric tons = 13 billion lbs/year
  - Global requirement of about 4 crackers per year on average
  - Naphtha crackers are required to meet demand in most regions

> Naphtha cracking will continue to be the global price setter
  - Current US expansion projects will only maintain global market share this decade
  - Additional ethane supplies will allow the US to continue to hold current levels

Source: IHS Chemical
Additional ethylene expansions will be needed to keep pace with production growth

Source: Williams research

[Diagram showing estimated US ethane supply from 2010 to 2030, with a projection of additional 6+ crackers needed by 2025. The chart illustrates the difference between current and announced projects against the need for additional supply growth.]
Globally competitive feedstock supplies stabilize North America’s share of global ethylene production

North America global market share of ethylene production

- Losing market share before the shale revolution
- North America develops abundant new shale resources that provide one of the lowest-cost feedstocks in the world

Source: IHS Chemical
Asia and Middle East grow ethylene positions

Global Ethylene Production
2000

Global Ethylene Production
2012

Global Ethylene Production
2022

Source: IHS Chemical

Middle East to more than double

US only holding market share, despite ethylene new builds

Asia to capture largest slice of the pie

North America
Europe
Asia
Middle East
Others

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Williams Petchem Services: Open access solutions for the petrochemicals industry

Current major projects

> Under construction:
  - Ethane pipeline system expansion
    • First customer deliveries April, 2013
  - Texas Belle Pipeline: Isobutane and Normal Butane

> Under development:
  - Promesa Pipeline: Ethylene Pipeline and Storage Hub
  - Jackrabbit Pipeline: PGP Pipeline and Storage Hub Development
Expectations for Promesa Pipeline: Extending the Williams Ethylene Hub

> Open-Access pipeline for ethylene, connected to the Williams Hub
  – Increases direct access to the Williams Hub for producers and consumers
  – Provides additional liquidity by increasing intra-month delivery options

> Redeployment of idle pipelines to a growing petchem market
  – Results in a lower cost structure for the industry
  – Reduces the development time

> Expected startup by Q3 2015
  – Distance = 48 miles, Estimated connections = 6 to 12 new delivery/receipt points
  – Existing Pipe = 37 miles
  – New Build Pipe = 11 miles
Promesa Pipeline: Extension of the Williams Ethylene Hub
Expectations for Jackrabbit Pipeline: Positioned for propylene growth

> Open-Access pipeline and storage for Polymer Grade Propylene
  - Reduces infrastructure costs for PDH and propylene derivative investments
  - Provides an efficient hub for spot transactions, expanding liquidity and price transparency

> Redeployment of idle pipelines to a growing petchem market
  - Results in a lower cost structure for the industry
  - Reduces the development time

> Expected startup by Q3 2015
  - North Section (South Houston to Mont Belvieu) consists of 41 miles of pipe: 36 miles of existing pipe and 5 miles of new build pipe
  - South Section (South Houston to Corpus Christi) consists of 136 miles of pipe: 53 miles of existing pipe and 83 miles of new build pipe
Jackrabbit Pipeline: Polymer Grade Propylene Infrastructure to support PDH growth
Jackrabbit Pipeline will provide linkage from South Texas to Mont Belvieu
Williams NGL & Petchem growth strategy is focused on linking new supplies with markets.
Conclusions

> The North American propylene market will change from a pure “byproduct” market to an “on-purpose”-driven market influenced by propane pricing
  > Petrochemical growth requires linkage back to Shale Gas economics through long-term structural relationships using propane-based pricing
  > North American PDH projects should be the low-cost incremental supply in the global market but current projects provide little growth beyond historical demand
  > Additional PDH projects will be developed in North American as surplus propane becomes available

> Normal butane is not attractive as a petrochemical feedstock…. for now
  > Continued lower butane prices relative to crude could change that view
  > Butane may become a more preferred export product over propane as PDH projects develop

> Williams intends to develop solutions to support petrochemical growth in North America
  > Provide natural gas producers new markets for their growing liquids production
  > Provide petchem consumers a competitive platform for growth in North America