Liquids Pipelines
Guy Jarvis
President, Liquids Pipelines
Key Messages

Fundamentals support a robust and transparent plan

• Optimize the Mainline to drive value

• Operate key new projects that commenced service in 2015

• Execute secured projects to add capacity in 2017

• Position the Mainline for further expansion and market access post 2017

• Develop a USGC regional infrastructure business plan
Near to medium term growth secure, long term growth related to pace of price recovery

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Price Volatility: Implication for Market Access

USGC provides strong and stable netback for Canadian crude

- Volatile absolute prices have significant impact on offshore price differentials
- Difficult to assess WCSB netback potential for offshore markets
- USGC netbacks have remained fairly stable and strong

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WCSB Crude Supply

WCSB continues to grow over the long term

- Incremental economics of projects under construction
- Long term price views
- Synergies with existing operations
- Cost reductions
- Integrated operations

Source: CAPP – Crude Oil Forecast, Markets and Pipelines (June 2015)
Oil Sands Blended Supply Outlook

Highly transparent supply outlook drives growth

Incremental Oil Sands Blended Supply (Cumulative kbpd)

- **Husky Energy**
  - "Husky Energy has commenced steam operations at the second of two processing plants at the Sunrise Energy Project in northeast Alberta. The second plant is expected to commence production later this year as Sunrise continues to steadily ramp up towards full capacity of 60,000 barrels per day around the end of 2016."

- **Imperial**
  - "Imperial today announced the successful startup of the Kearl oil sands expansion project. Production from the expansion project is expected to ultimately reach 110,000 barrels per day, bringing total production from Kearl to 220,000 barrels per day."
  - Imperial Oil News Release June 16, 2015

- **ConocoPhillips**
  - "ConocoPhillips safely delivered first oil at its Surmont 2 in-situ oil sands facility in Canada. Production will ramp-up through 2017, adding approximately 118,000 barrels per day gross capacity."

- **Teck**
  - "With construction now more than one-third complete, we're right on target with both budget and schedule, and we remain fully committed to the project (Fort Hills)."
  - Suncor Energy Inc. Second Quarter 2015 Conference Call July 30, 2015

- **Suncor**
  - "With construction now more than one-third complete, we're right on target with both budget and schedule, and we remain fully committed to the project (Fort Hills)."
  - Suncor Energy Inc. Second Quarter 2015 Conference Call July 30, 2015

- **Total**
  - "With construction now more than one-third complete, we're right on target with both budget and schedule, and we remain fully committed to the project (Fort Hills)."
  - Suncor Energy Inc. Second Quarter 2015 Conference Call July 30, 2015
Pipeline Capacity vs. Supply Outlook

Source: CAPP – Crude Oil Forecast, Markets and Pipelines (June 2015)
Mainline Overview

Strategic position and contractual constructs minimize throughput risk on Mainline

- Low cost access to key markets supports continued Mainline demand
  - Apportionment on heavy lines
  - Downstream contracts draw barrels through the Mainline
- Limited near term growth in export capacity
- Top shippers include fully integrated oil companies and refiners
- Sole source supplier to certain PADD II and III refiners

<table>
<thead>
<tr>
<th>Stable, Competitive Tolls</th>
</tr>
</thead>
<tbody>
<tr>
<td>IJT Benchmark Toll ($USD)</td>
</tr>
<tr>
<td>2011: $3.85</td>
</tr>
<tr>
<td>2012: $3.94</td>
</tr>
<tr>
<td>2013: $3.98</td>
</tr>
<tr>
<td>2014: $4.02</td>
</tr>
<tr>
<td>2015: $4.07</td>
</tr>
</tbody>
</table>

Percentage of Mainline Revenue

Top 10 Shippers  Other Shippers
Competitive Position: Well Entrenched Advantages

Scale and flexibility to reach best markets at lowest cost

• Low-cost and stable tolls
• Market access optionality
• Crude slate and capacity optimization
• Unparalleled terminal and operational flexibility
Competitive Position: Scalable Capacity Additions

Heavy Throughput ex Gretna vs Capacity

(kbpd)

Source: Enbridge, Customer Service
Competitive Position: Market Reach

<table>
<thead>
<tr>
<th>Market</th>
<th>Capacity (kbdp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainline Connected Refineries</td>
<td>1,900</td>
</tr>
<tr>
<td>Mainline Connected Markets (Pipelines)</td>
<td></td>
</tr>
<tr>
<td>PADD II</td>
<td>200</td>
</tr>
<tr>
<td>Cushing/USGC</td>
<td>775</td>
</tr>
<tr>
<td>Quebec/Ontario</td>
<td>300</td>
</tr>
<tr>
<td>Patoka</td>
<td>300</td>
</tr>
<tr>
<td>Total Pipeline Access</td>
<td>1,575</td>
</tr>
<tr>
<td>Grand Total</td>
<td>3,475</td>
</tr>
</tbody>
</table>
Operational Reliability

Optimizes capacity, increases efficiency and drives customer confidence

*Includes core maintenance capital and non-growth enhancements

### Maintenance & Integrity Capital* ($ millions)

- 2009: 0
- 2011: 1,200
- 2013: 1,400
- 2015: 1,200

### In Line Inspections (Quantity)

- 2009: 100
- 2011: 150
- 2013: 200
- 2015: 150

### Integrity Digs (Quantity)

- 2009: 1,000
- 2011: 2,000
- 2013: 3,000
- 2015: 2,000
Strategic Overview

Extending our growth through 2019

• Optimize and leverage regional position in Oil Sands and Bakken

• Execute our secured growth projects
  - on time and on budget

• Position for further Mainline expansion and related market access investments

• Develop new USGC regional infrastructure opportunities
Regional Oil Sands

- Woodland Pipeline
- Athabasca Terminal
- Norealis Terminal
- Norealis Pipeline
- Wood Buffalo Pipeline
- Cheecham Terminal
- Kirby Lake Terminal
- Woodland Pipeline Extension
- Waupisoo Pipeline
- Edmonton
- Hardisty
- Athabasca Pipeline

Alberta

Enbridge Mainline
Regional Oil Sands

- **Wood Buffalo Extension**
  - Capital: $1.3B
  - In-Service: 2017
  - Capacity: 800 kbpd

- **Athabasca Pipeline Twin**
  - Capital: $1.3B
  - In-Service: 2017
  - Capacity: 800 kbpd
Regional Oil Sands

Norlite Diluent Pipeline Project

<table>
<thead>
<tr>
<th>Capital</th>
<th>$0.9B*</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Service</td>
<td>2017</td>
</tr>
<tr>
<td>Capacity</td>
<td>280 kbd</td>
</tr>
</tbody>
</table>

*Enbridge share of capital costs shown. Total project cost is expected to be $1.3B. Enbridge will construct and operate the Norlite pipeline system. Keyera Corp. will fund 30% of the project cost.
Bakken Regional

- Saskatchewan System
- Bakken Pipeline
- North Dakota System
- Berthold Rail
Bakken Regional

<table>
<thead>
<tr>
<th>Sandpiper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capital</strong></td>
</tr>
<tr>
<td><strong>In-Service</strong></td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
</tr>
</tbody>
</table>
### Mainline

<table>
<thead>
<tr>
<th><strong>Alberta Clipper</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capital</strong></td>
</tr>
<tr>
<td><strong>In-Service</strong></td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
</tr>
</tbody>
</table>

![Map of Alberta Clipper pipeline with key locations: Edmonton, Hardisty, Regina, Gretna, Cromer, Clearbrook, Superior, Chicago, Flanagan, Patoka]
Mainline

Line 3 Replacement

<table>
<thead>
<tr>
<th>Capital</th>
<th>$7.5B</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Service</td>
<td>Late 2017</td>
</tr>
<tr>
<td>Capacity</td>
<td>Restore capacity to 760 kbdp</td>
</tr>
</tbody>
</table>
Mainline

Southern Access

- Capital: $1.2B
- In-Service: 2017
- Capacity: 1,200 kbdp

Edmonton → Hardisty → Regina → Cromer → Gretna → Clearbrook → Superior → Chicago → Flanagan → Patoka
Market Access

Flanagan South

Seaway and Seaway Twin
Market Access

**Line 9**

- **Capital**: $0.8B
- **In-Service**: End of 2015
- **Capacity**: 300 kbpd
Market Access

Southern Access Extension

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital</td>
<td>$0.6B</td>
</tr>
<tr>
<td>In-Service</td>
<td>End of 2015</td>
</tr>
<tr>
<td>Capacity</td>
<td>300 kbd</td>
</tr>
</tbody>
</table>

The map shows the location of Southern Access Extension with points of interest such as Cushing, Houston, and Chicago.
Positioning for Growth Beyond 2017: Mainline

### Pipeline Description Capacity (kbpd) Execution Comments

<table>
<thead>
<tr>
<th>Pipeline</th>
<th>Description</th>
<th>Capacity (kbpd)</th>
<th>Execution Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line 3</td>
<td>Restore capacity</td>
<td>400</td>
<td>No cross border permitting required</td>
</tr>
<tr>
<td>Line 4</td>
<td>Rate optimization</td>
<td>50</td>
<td>No cross border permitting required</td>
</tr>
<tr>
<td>Line 2</td>
<td>Eliminate ND receipts</td>
<td>150</td>
<td>Requires restoration of Line 2 capacity</td>
</tr>
<tr>
<td>Line 65</td>
<td>Additional pumping</td>
<td>100</td>
<td>NEB &amp; State approvals required</td>
</tr>
<tr>
<td>Line 3</td>
<td>Additional pumping</td>
<td>100</td>
<td>NEB &amp; State approvals required</td>
</tr>
</tbody>
</table>

**Total** 800 Upstream Capacity

- Western Canadian Expansion project suite
- Scalable, incremental, low risk, and highly executable
- Investment opportunity ~$1.5B
Positioning for Growth Beyond 2017: Line 61 Twin

- Western Canadian expansion will create a bottleneck at Superior
- Line 61 Twin relieves bottleneck and positions for market access growth
- Coordinating early development activities

**Project Details**

<table>
<thead>
<tr>
<th>Project Details</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scope</strong></td>
<td>Up to 42” twin of existing Line 61</td>
</tr>
<tr>
<td><strong>Capital</strong></td>
<td>$3.5B - $4B</td>
</tr>
<tr>
<td><strong>In-Service Date</strong></td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
<td>Enables full Mainline expansion by 800 kbdp</td>
</tr>
</tbody>
</table>
Positioning for Growth Beyond 2017: Market Access

- Positioned for a range of expansions and opportunities
  - Seaway/Flanagan South
  - Southern Access Extension
  - Eastern Gulf Coast Access
- Stable, competitive toll outlook
- Strong USGC market provides attractive netbacks
USGC: Fundamentals Overview

- Massive, energy intensive industrial corridor
  - 8 MMbpd refining capacity
  - Large NGL handling capability
  - Unprecedented petrochemical growth

- Wide range of supporting energy infrastructure

- Strong and growing import/export infrastructure
  - Refined products
  - Processed condensate
  - Canadian crude
  - U.S. crude

- Resilient foundation for long term assets
USGC – The Opportunity

- Leverage expertise in fee-for-service, independent terminal and pipeline operation
- Platform for future growth across multiple commodities and modes of transport
- Investment potential in the range of $5B
Key Takeaways

Fundamentals support a robust and transparent plan

• Optimize the Mainline to drive value

• Operate key new projects that commenced service in 2015

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