Liquids Pipelines
Steve Wuori
President, Liquids Pipelines & Major Projects
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North America Crude Oil Pricing

Pricing as at September 25, 2013
(USD per barrel)

North American Supply
North American Demand
Public Opposition to Infrastructure
Transportation Bottlenecks
Volatile Price Differentials

*Brent price is a landed price on US East Coast/ US Gulf Coast. Assumed tanker freight cost of US$2.00 per bbl.
North American Crude Supply Growth (2013 - 2025)

+ 7 MMbpd by 2025

Sources: Enbridge Internal Forecast and External Forecasts
WCS Remains Disadvantaged

$/bbl

2010 2011 2012 2013

WTI-Brent

WCS-Maya
2013 Light & Heavy Markets

Light Markets
- East Coast
- Eastern PADD II
- PADD III

Heavy Markets
- PADD II
- PADD III

Source: StatsCan, EIA, Enbridge Internal Forecasts
US Refining Crude Coverage

U.S. Production Displaces Waterborne Imports

Sources: Enbridge Internal Forecast
Providing New Market Access (Heavy & Light)

Incremental Market Access Volumes

+ ~1.0 MMbpd of Heavy
+ ~0.7 MMbpd of Light

Light Oil Market Access ($6.3B)

Eastern Access ($2.7B)

Western USGC Access ($6.4B)

+1.7 MMbpd New Market Access by 2015
System Reliability & Integrity

- **Risk Management**
  - Risk Policy, Risk Framework, Risk Culture
  - Survey + Training

- **Inline inspection (ILI)**
  - Significant dig program 3,400 pipe joints examined followed with non-destructive testing
  - Research and Development in tool enhancements - Medical imaging technology

- **On-line sensors**
  - Pressures/cycling, pipe movement, external & internal corrosion, vibration

- **Surveys**
  - Pipe depth, river crossing and geotechnical conditions, corrosion control, 3rd party activity

- **Incident Response**
  - Focused Emergency response tactical plans

- **Health + Safety**
  - Process safety management implementation
15th Annual Investment Community Conference

Enbridge Day 2013

Liquids Pipelines

Vern Yu
Senior Vice President, Business & Market Development
WCSB Pipeline Takeaway Capacity*

*Includes Bakken entering ENB Mainline

Sources: Enbridge Internal Forecast

- Keystone XL
- ENB Northern Gateway
- TransMountain Expansion
- Energy East

*Includes Bakken entering ENB Mainline
Alberta Regional Projects

Secured Projects:
1. Expand Waupisoo Pipeline to 550 kbpd (In-service)
2. Expand Athabasca Pipeline to 570 kbpd (PH2 2014)
3. Twin Athabasca Pipeline 450 kbpd (2014)
4. Woodland Pipeline 400 kbpd (In-service)
5. Norealis Pipeline 90-270 kbpd (2013)
6. Wood Buffalo Pipeline (In-service)
7. Suncor Bitumen Blend (In-service)
10. Woodland Pipeline Extension 400 kbpd (2015)
11. JACOS Lateral 40 kbpd (2016)

Potential Projects:
- Industry Diluent Pipeline (Norlite)
- Cheecham to Edmonton Pipeline
- Cheecham to Hardisty Pipeline
- Gathering Laterals

Total Secured Capital = $4.5 B*

* Includes ~$1.0B of projects that came into service in 2012

Total Potential Capital ~$4 B
Industry Diluent Pipeline (Norlite)

Base Case:
- **Scope:** 489km, 16” pipeline
- **Expected In-service:** Q2 2017
- **Capacity:** 200 kbpd

Expanded Case:
- **Scope:** 489km, 24”/20” pipeline
- **Expected In-service:** Q2 2017
- **Capacity:** 270 kbpd

- Keyera has the option to participate in the project with a 30% working interest

Total Potential Capital ~ $1.4 B
Bakken Crude Oil Supply vs. Pipeline Takeaway Capacity

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<td>MMbpd</td>
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**Range of External Supply Forecasts**

- **Enbridge Sandpiper**
- **Plains Bakken North**
- **Baker Take-away (Platte)**
- **Enbridge Berthold Rail ND**
- **Enbridge Bakken Expansion Program**
- **Enbridge North Dakota to Clearbrook**
- **Tesoro Mandan Refinery**

**Rail Cost ($ per bbl)**
- **Patoka** $10.50
- **Montreal** $14.50

**Pipeline Cost ($ per bbl)**
- **Patoka** $6.50
- **Montreal** $7.50

**Pipeline Advantage ($ per bbl)**
- **Patoka** + $4.00
- **Montreal** + $7.00
Bakken Regional Projects

Total Secured Capital = $0.7 B

- Enbridge Mainline
- Saskatchewan System (ENF)
- North Dakota System
- Bakken Expansion Project
  - 145 kbpd (In-service)
- Bakken Access Program (well connections)
  - 100 kbpd (2013)
- Berthold Rail
  - 80 kbpd (In-service)
Sandpiper

- **Scope:** 614 mile, 24”/30” pipeline
- **Capacity:** ~225 kbpd/375 kbpd
- **ISD:** Early 2016

Total Secured Capital = $2.6 B*

*Total Secured Capital of $2.6B is a component of Light Oil Market Access Program*
Flanagan South Pipeline ($2.8B)
- Enbridge Inc. 100%
- Twin Spearhead Pipeline (36-inch pipeline, 591 miles)
- Initial capacity 585 kbdp, expandable to 800 kbdp
- In-service mid-2014

Seaway Pipeline Acquisition + Reversal ($1.3B)
- Enbridge Inc. and Enterprise JV
- Initial capacity 150 kbdp, up to 400 kbdp by Q1 ‘13
- Reversal started May 2012
- Connectivity to ECHO Terminal in 2013 (65 miles)

Seaway Pipeline Twin + Lateral ($1.1B)
- Enbridge Inc. and Enterprise JV
- Twin Seaway Pipeline (515 miles)
- Initial capacity 450 kbdp, In-service mid-2014
- Connectivity to Port Arthur (85 miles)

Total Secured Capital = $5.2 B*
1. Line 5 Expansion +50 kbdp (In-Service) ✔
2. Spearhead North Expansion +105 kbdp (2013)
4. Line 9A Reversal +240 kbdp (In-Service) ✔
5. Line 9B Reversal +240 kbdp (2014)
6. Toledo Pipeline Twin +80 kbdp (In-Service) ✔

Total Secured Capital = $2.7 B
Market Access – Light Oil Market Access

1. Sandpiper Pipeline +225-375 kbpd (2016)
4. Line 9 Expansion +60 kbpd (2014)

Total Secured Capital = $4.4 B*

* Excluding associated Mainline expansions
### Enbridge Mainline Expansions

<table>
<thead>
<tr>
<th>Expansion</th>
<th>Capacity</th>
<th>Cost</th>
<th>Year(s)</th>
<th>Market Access</th>
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<tbody>
<tr>
<td><strong>Canadian Mainline Terminal Capability</strong></td>
<td>$0.6B</td>
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<td>2013/2015</td>
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<td><strong>Edmonton to Hardisty</strong></td>
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<td>2015</td>
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<td><strong>Alberta Clipper to 570 &amp; 800 kbdp</strong></td>
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<td>2014/2015</td>
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<tr>
<td><strong>Southern Access to 560 kbdp</strong></td>
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<td>2014</td>
<td>✓</td>
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<tr>
<td><strong>Southern Access to 1,200 kbdp</strong></td>
<td>$1.3B</td>
<td></td>
<td>2015</td>
<td>✓</td>
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</tbody>
</table>

Total Secured Capital = $4.9 B
Southern Lights Expansion:

- Open season before end of 2013
- **Capacity**: +95 kbpd (to 275 kbpd)
- **ISD**: Q4 2016

**Total Potential Capital** ~ $0.7 B
New Initiatives – Enhanced Market Access

~1.7 MMbpd of potential new market access

**West**
- Northern Gateway Pipeline

**East**
- Chicago Rail

**South**
- Flanagan South / Seaway Expansion
- Southern Access Extension Upsize
- Eastern U.S. Gulf Coast Access

Total Potential Capital ~ +$7.5B
Key Takeaways

- North American crude oil fundamentals support significant investment opportunities

- Enbridge system provides the best netbacks for Shippers

- Regional Oil Sands investment opportunities continue to be robust