• 140 producer member companies
• Explore for, develop and produce natural gas, natural gas liquids, crude oil, synthetic crude oil, bitumen and elemental sulphur
• Members produce more than 95 per cent of Canada’s natural gas and crude oil
• 135 associate members provide a wide range of services that support the upstream crude oil and natural gas industry
Canada, with 173 billion barrels in oil sands reserves, ranks 2\textsuperscript{nd} only to Saudi Arabia in global oil reserves.
Top 10 World Crude Oil Producers in 2007

- **Russia**
- **Saudi Arabia**
- **USA**
- **Iran**
- **China**
- **Mexico**
- **Canada 2007**
- **UAE**
- **Kuwait**
- **Venezuela**

**Source:** EIA & CAPP

Oil sands growth will move Canada from #7 to #4 in the world by 2015
### Oil Sands Projects in Three Deposits

#### Athabasca - Mining

<table>
<thead>
<tr>
<th>Operator</th>
<th>Project</th>
<th>Initial</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albian/Shell</td>
<td>Muskeg/Jackpine</td>
<td>155,000</td>
<td>560,000</td>
</tr>
<tr>
<td>Suncor</td>
<td>Base Plant</td>
<td>280,000</td>
<td>550,000</td>
</tr>
<tr>
<td>Syncrude</td>
<td>Base Plant</td>
<td>300,000</td>
<td>600,000</td>
</tr>
<tr>
<td>CNRL</td>
<td>Horizon (2008)</td>
<td>135,000</td>
<td>577,000</td>
</tr>
<tr>
<td>Imperial</td>
<td>Kearl</td>
<td>100,000</td>
<td>300,000</td>
</tr>
<tr>
<td>Petro-Canada</td>
<td>Fort Hills</td>
<td>100,000</td>
<td>190,000</td>
</tr>
<tr>
<td>Total E&amp;P</td>
<td>Joslyn Creek Mine</td>
<td>50,000</td>
<td>200,000</td>
</tr>
</tbody>
</table>

#### Athabasca - In Situ Thermal

<table>
<thead>
<tr>
<th>Operator</th>
<th>Project</th>
<th>Initial</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>ConocoPhillips</td>
<td>Surmont</td>
<td>25,000</td>
<td>110,000</td>
</tr>
<tr>
<td>Encana/Conoco Phillips</td>
<td>Christina/Foster Creek</td>
<td>42,000</td>
<td>400,000</td>
</tr>
<tr>
<td>JACOS</td>
<td>Hangingstone (pilot)</td>
<td>10,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Suncor</td>
<td>Firebag</td>
<td>68,000</td>
<td>375,000</td>
</tr>
<tr>
<td>Total E&amp;P</td>
<td>Joslyn Creek</td>
<td>10,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Devon</td>
<td>Jackfish (2008)</td>
<td>35,000</td>
<td>70,000</td>
</tr>
<tr>
<td>Husky</td>
<td>Sunrise</td>
<td>60,000</td>
<td>240,000</td>
</tr>
<tr>
<td>OPTI/Nexen</td>
<td>Long Lake (2008)</td>
<td>72,000</td>
<td>288,000</td>
</tr>
<tr>
<td>Petro-Canada</td>
<td>MacKay River</td>
<td>22,000</td>
<td>70,000</td>
</tr>
</tbody>
</table>

#### Cold Lake - In Situ Thermal

<table>
<thead>
<tr>
<th>Operator</th>
<th>Project</th>
<th>Initial</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>Hilda Lake (pilot)</td>
<td>600</td>
<td>20,000</td>
</tr>
<tr>
<td>CNRL</td>
<td>Primrose</td>
<td>50,000</td>
<td>110,000</td>
</tr>
<tr>
<td>Imperial</td>
<td>Cold Lake</td>
<td>150,000</td>
<td>170,000</td>
</tr>
<tr>
<td>Husky</td>
<td>Tucker</td>
<td>18,000</td>
<td>40,000</td>
</tr>
</tbody>
</table>

#### Peace River - In Situ Thermal

<table>
<thead>
<tr>
<th>Operator</th>
<th>Project</th>
<th>Initial</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>Peace River</td>
<td>12,000</td>
<td>100,000</td>
</tr>
</tbody>
</table>

---

*In Situ Projects*  
*Mining Projects*
• Two oil supply cases prepared:
  ▪ Pipeline Planning Case to develop pipeline infrastructure
  ▪ Moderate Growth Case or the “expected case”
*Bitumen Blend includes bitumen blended with diluent or upgraded crude oil and some volumes of upgraded heavy sour crude oil.
Western Canadian Crude Oil Supply
Moderate Growth Case

*Bitumen blend includes bitumen blended with diluent or upgraded crude oil and some volumes of upgraded heavy sour crude oil.
CAPP surveyed refiners in traditional markets
CAPP spoke to refiners in non-traditional markets
CAPP did not put any constraints on the data
Assists in developing pipeline infrastructure
Ontario Forecast
Western Canadian Crude Oil Receipts

Total Refining Capacity 383 thousand b/d

Conv Light Sweet  Conv Med Sour  Heavy  Light Synthetic


thousand b/d

0  50  100  150  200  250  300  350  400
PADD I – Imported Crude Oil 2003-2007

Total Refining Capacity 1,627 thousand bpd

- Light Sweet
- Light/Medium Sour
- Heavy

Source: EIA
PADD II Forecast
Western Canadian Crude Oil Receipts

Total Refining Capacity 3,622 thousand b/d


Conventional Light Sweet
Conventional Medium Sour
Heavy
Light Sweet Synthetic
PADD III - Imported Crude Oil 2003-2007

Total Refining Capacity 7,990 thousand bpd

Source: EIA
PADD IV Forecast
Western Canadian Crude Oil Receipts

Total Refining Capacity 598 thousand bpd

Conv Light Sweet
Conv Med Sour
Heavy
Light Synthetic

2007
2008
2009
2010
2011
2012
2013
2014
2015

Thousand b/d
PADD V (Washington) Forecast
Western Canadian Crude Oil Receipts

Total Refining Capacity 624 thousand bpd

- Conv Light Sweet
- Conv Med Sour
- Heavy
- Light Synthetic

2007 to 2015
PADD V (California) - Imported Crude Oil 2003-2007

Total Refining Capacity 2,022 thousand b/d

Source: EIA
North American Oil Pipeline Expansions and Proposals
Current Crude Oil Pipeline Expansions from Western Canada

- 1. Kinder Morgan TMX1A Expansion
- 2. Kinder Morgan TMX1B Expansion
- 3. TransCanada Keystone
- 4. TransCanada Keystone Cushing Extension
- 5A. Enbridge Alberta Clipper
- 5B. Enbridge Line 4 Extension
Oil Pipeline Expansions/Proposals to the US Midwest, Ontario, Québec & the US East Coast
Oil Pipeline Expansions/Proposals to the US Gulf Coast

- TransCanada Keystone
- TransCanada Keystone Cushing Extension
- Enbridge Alberta Clipper
- Enbridge Line 4 Extension
- Enbridge Southern Access Expansion
- Enbridge Southern Access Extension
- Enbridge Spearhead Expansion (N/S)
- Sunoco - to US Gulf Coast
- ExxonMobil/Enbridge Texas Access
- ExxonMobil/Enbridge Pegasus Expansion
- Centurion Pipeline Reversal
- TEPPCO/Kinder Morgan Chinook/Maple/leaf
- BP No. 1
- TransCanada Keystone XL
- Allex Energy
Oil Pipeline Expansions/Proposals to the US West Coast
Diluent Pipeline Proposals

Map showing various pipeline proposals in North America, including

- Enbridge Gateway Condensate Import
- Enbridge Southern Lights
- Capline/Caprex
Canadian & US Crude Oil Pipelines - All Proposals

1. Kinder Morgan TMX 1A Expansion
2. Kinder Morgan TMX 1B Expansion
3. TransCanada Keystone
4. TransCanada Keystone Cushing Ext.
5A. Enbridge AB Clipper
5B. Enbridge Line 4 Extension
6. Minnesota Pipeline Expansion
7A. Enbridge Southern Access Expansion
7B. Enbridge Southern Access Ext.
8. Enbridge Line 5 Expansion
9. Enbridge Line 6B Expansion
10. Enbridge Line 6C Expansion
11. Enbridge Line 9 Re-reversal
12. Portland Pipeline Reversal
13. Sunoco – to Philadelphia
14. Enbridge Pioneer (Opt 2)
15. Enbridge Eastern PADD II
16. Enbridge Pioneer (Opt 1)
17. ExxonMobil Mustang Expansion
18. Enbridge Spearhead Expansion (N/S)
19. Sunoco - to US Gulf Coast
20. ExxonMobil/Enbridge Texas Access
22. Centurion Pipeline Reversal
23. TEPPCO/KM Chinook-Maple Leaf
24. BP No. 1
25. TransCanada Keystone XL
26. Altex Energy
27. Kinder Morgan TMX2 Expansion
28. Kinder Morgan TMX3 Expansion
29. TransCanada Alberta-California
30. Enbridge Northern Gateway
31. Kinder Morgan Northern Leg
32. Enbridge Gateway Condensate Import
33. Enbridge Southern Lights
34. Capline/Chicap
35. Enbridge N. Dakota
36. Enbridge Light Sour Line
• 2008 forecast is below last year’s but growth in oil sands remains significant
• About 1.1 million b/d of pipeline capacity is being added from western Canada through 2010
• Currently approved/ in construction projects expected to be sufficient until 2013, afterwards additional pipeline capacity will be required
• Several pipeline proposals to new markets - US East and Gulf Coasts, and Asia
• Report available at www.capp.ca