ASPHALT SUPPLY IN A VOLATILE OIL WORLD

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CRUDE OIL SUPPLY

A WORLD LOOK
Crude Oil Supply (2006)

World Crude Oil Production
Millions of Barrels Per Day

- FSU/E. Europe: 12.6
- W. Europe: 6.3
- Latin America: 10.6
- US/Canada: 11.3
- Asia/Pacific: 9.8
- Africa: 8.4
- Middle East: 26.0

Total: 85 MMB/D

World Proven Crude Oil Reserves
Billions of Barrels

- FSU/E. Europe: 79
- W. Europe: 15
- Latin America: 116
- US/Canada: 201
- Asia/Pacific: 36
- Africa: 102
- Middle East: 743

Total: 1,292 BB
Crude Oil Demand

- Demand has risen by 7 MMBD (9%) since 2002.
- Demand at 85 MMBD or 98% of world daily delivery capacity.
- Vulnerable to supply disruptions caused by storms, accidents, breakdowns, political unrest.
- 65% of proven reserves within national oil companies and 16% held by Russia.
- Traditional companies have full access to 7% of reserves and 12% through partners (if allowed).
CRUDE OIL PRICING
WTI Price by Year
WTI Price by Quarter
REFINING CAPACITY
U. S. Refining Capacity

Last New U. S. Refinery Built in 1976

Source: Oil & Gas Journal
U. S. Asphalt Refining Capacity

Production Range: 600 B/D to 60,000 B/D

Source: Oil & Gas Journal
U. S. Refining Coking Capacity
U.S. Coker Construction Projects 2005 - 2011

- Planning, Engineering, or Construction Phase
- Total Refineries: 360 MB per day
- Asphalt Refineries: 197 MB per day

* Source: Argus Asphalt Report
Refinery Yield (% of Crude Intake)
PRODUCTS
SUPPLY/DEMAND
Historical Asphalt Supply/Demand

Millions Tons - Liquid

Source: Oil & Gas Journal
Crude Oil Sources
<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Barrels Per Day</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Canada</td>
<td>1,874</td>
</tr>
<tr>
<td>2</td>
<td>Saudi Arabia</td>
<td>1,501</td>
</tr>
<tr>
<td>3</td>
<td>Mexico</td>
<td>1,392</td>
</tr>
<tr>
<td>4</td>
<td>Venezuela</td>
<td>1,135</td>
</tr>
<tr>
<td>5</td>
<td>Nigeria</td>
<td>893</td>
</tr>
<tr>
<td>6</td>
<td>Iraq</td>
<td>573</td>
</tr>
</tbody>
</table>
Canada’s Historical Crude Supply Volumes To The USA Have Been Doubling Every Decade Since 1988

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimate</th>
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<tbody>
<tr>
<td>1988</td>
<td>681</td>
</tr>
<tr>
<td>1998</td>
<td>1,266</td>
</tr>
<tr>
<td>2007 Current as of June</td>
<td>1,874</td>
</tr>
<tr>
<td>2007 Estimate</td>
<td>2,100</td>
</tr>
<tr>
<td>2011 Estimate</td>
<td>2,400</td>
</tr>
<tr>
<td>2015 Estimate</td>
<td>3,000</td>
</tr>
<tr>
<td>2020 Estimate</td>
<td>4,600</td>
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</table>
CANADIAN EXPORTS - 2007-2020

Important Points:

1. Canada is expected to complete 2007 with over 2,000,000 bbls per day export to the USA.

2. By 2020 Canada expects to be exporting on a moderate growth estimate 4,600,000 bbls per day to the USA over a 100% increase.

3. Approximately half (2,300,000) of this daily amount will be “DILBIT” that is heavy asphaltic crude cut with a diluent. (25% natural gas diluent and 75% heavy asphaltic oil.)

4. The remaining half (2,300,000) will be “SYNBIT” which is made up of 50% synthetic crude from the Athabasca Tar Sands Upgraders and 50% heavy asphaltic oil.
Summary:

• The most important point is that over the next decade, the USA’s number one crude oil supplier (Canada) will be increasing the volume of good asphaltic crude to the USA by 100%.

• While the main target market for this heavy Canadian crude is refined cokers for the refiner capable of making asphalt there should be ample availability of a suitable high quality asphaltic crude.

• The majority of refiners of old had to make asphalt. Today’s refinery can make a choice.

• Simply put, asphalt has got to compete with the rest of the barrel or light products.
PRODUCTS PRICING

COKER ECONOMICS
Prices by Quarter
Prices by Quarter

- WTI
- Gasoline
- Asphalt
Asphalt vs Coker Feed Value

- WTI
- P&P MC Avg
- Gulf Coast Coker Value
## Current Coking Economics

<table>
<thead>
<tr>
<th>Gasoline/Diesel Pricing</th>
<th>Kansas City Asphalt Pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug., 07 Price: $95.00/BBL</td>
<td>Aug 07: $54.50/BBL*</td>
</tr>
<tr>
<td>Less Distribution: 6.00/BBL</td>
<td>($40/Ton): $7.15/BBL</td>
</tr>
<tr>
<td>Net to Refinery: $89.00/BBL</td>
<td>$47.35/BBL</td>
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<tr>
<td>Lost Value: $41.65/BBL</td>
<td></td>
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</table>

*Source – Poten & Partners*
Current Coking Economics

- 30,000 BBLS/Day Asphalt Production
- X 70% Gasoil Production
- 21,000 BBLS Gasoil for Gasoline/Diesel
- X $41.65/BBL Gasoline/Diesel diff. To Asphalt
- $874,650 per day added margin
- $1 Billion / $874,650 = 1,143 days (3.1 years payoff)
FUTURE OF THE INDUSTRY
FUTURE FOR U. S. ASPHALT

More heavy crude being produced and run

Asphalt will have to trend faster with crude oil prices and be competitive with light products – continued volatility

Transportation – cost rising and supply at maximum (marine/rail)

A continued push towards new products for pavement preservation due to limited dollars

Warm mix asphalt

Increase technical know how to deal with different asphalts or coker bottoms to produce pg grade materials

Recycling
QUESTIONS