Outline

- Canadian Olefins Feedstock Overview
- Industry Environment
- Risks/Challenges
- Aux Sable Overview
- Aux Sable Canada (ASC) Key Projects
- Conclusions
## Canadian Olefins Feedstock Overview

<table>
<thead>
<tr>
<th>Current Feedstocks</th>
<th>Alberta</th>
<th>Ontario</th>
<th>Quebec</th>
<th>Rest of Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2 capacity (b#/yr)</td>
<td>8.5</td>
<td>2.2</td>
<td>0.7</td>
<td>0.0</td>
</tr>
<tr>
<td>C2 growth since 1990</td>
<td>+270%</td>
<td>+30%</td>
<td>+10%</td>
<td>n/a</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Future Feedstocks</th>
<th>WCB/Arctic</th>
<th>low</th>
<th>none</th>
<th>??</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2 from nat gas</td>
<td>low</td>
<td>low</td>
<td>low</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Source – CCPA, Aux Sable
Industry Environment
Canadian Natural Gas Supply

Source: CAPP
Industry Environment
Alberta Natural Gas Supply/Demand

Source: EUB applications and public data
Industry Environment
Alberta Coalbed Methane Supply

Source: EUB applications and public data
Industry Environment: Canadian Crude Oil Supply

Oil Sands Production:
- 2005 = 1.0 million b/d
- 2015 = 3.5 million b/d
- 2020 = 4.0 million b/d

Source: CAPP
Industry Environment
Oil Sands Projects

Source: CAPP
Future Prospects for Olefin Feedstocks

- Extract more ethane from WCB gas production
  - Alliance gas (North Sable project)
  - Deeper cuts at straddle plants
  - Ensure C2+ extracted from natural gas used for fuel in Fort McMurray area
  - Implement Incremental Ethane Extraction Program (IEEP)

- Extract C2+ from Oil Sands Upgrader Off-gases
  - Fort McMurray area upgraders….extract C2+ from upgrader off-gases and pipeline to Fort Saskatchewan for processing
  - Fort Saskatchewan area upgraders….extract C2+ from upgrader off-gases and process streams depending on their olefinic content
  - Implement Incremental Ethane Extraction Program (IEEP)

- C2+ from Mackenzie gas and Alaskan gas
  - Potential exists to aggregate sufficient volumes of propylene in Fort Saskatchewan to support a worldscale polypropylene plant(s)
  - There does not appear to be a compelling reason to focus on heavy liquids or naphtha cracking in Alberta or other locations in Canada
C2+ Potential from Fort Saskatchewan Area Upgraders

Source: EUB applications and public data
Risks/Challenges

- WCSB gas production decline
- CBM impacts
- Cost environment
- Optimization of existing straddle plants
- Timing of Oil Sands developments
- Income Trust taxation changes
- Development of open access Alberta Hub
- Implementation of IEEP
Aux Sable Overview

Aux Sable U.S. owns and operates a 2.1 bcf/d world scale extraction/frac plant at terminus of Alliance Pipeline (Channahon, IL)

- Aux Sable has exclusive rights to extract C2+ from Alliance gas
- NGL production sold to BP under a long term agreement

Aux Sable Canada (ASC) performs supply function for Aux Sable U.S. and is developing a fee-based energy processing infrastructure business, primarily in Alberta

- First off-gas project for BA Heartland Upgrader is under construction
- Evaluating/developing other Fort Saskatchewan projects
  1. Off-gas processing/fractionation facilities
  2. Fort Saskatchewan ethane extraction plant
- Gas plants & pipeline connections in NE Alberta and NW B.C. to deliver rich gas into Alliance’s gathering system

Aux Sable companies are both private and are owned by Enbridge, Fort Chicago, and Williams
Aux Sable U.S. Channahon Plant
Heartland Offgas Project

- Heartland upgrader offgas 15 mmcf/d
  - 2200 bbl/d of C2 (40% ethylene)
  - 2000 bbl/d of C3+
- Startup in Q3/Q4 2008
- C2/C2= to Alberta petchem buyer
- C3+ to export markets
- Residue gas returned to BA
- All regulatory approvals received
- Equipment ordered, construction in spring/summer 2007
Proposed Fort Saskatchewan Extraction Plant (North Sable Project)

- Process Alliance Pipeline gas at Fort Saskatchewan
- Capacity 1.2 bcf/d
- Ethane recovery
  - ~90% ethane extraction
  - ~40 mb/d of purity ethane
- Reinject C3+ for recovery at Channahon plant
  - Option to recover selective components if economic
- Land on Alliance right of way purchased
  - Located adjacent to Dow and Shell
- Regulatory and preliminary engineering underway
Alberta holds the most promise for growth in olefins based petrochemicals
- Based largely on C2 cracking and recovering C2=/C3= from upgrader off-gases

First priority is to extract ethane from existing gas streams
- May see rationalization of some existing extraction plants to secure sufficient gas commitments to underpin deeper cuts

The primary alternative feedstock with sufficient volume and growth potential is C2+ from upgrader off-gases
- The required extraction and processing facilities should be developed to ensure cost effectiveness (e.g. centralized processing sites where possible)

Alberta’s IEEP will play a key role in Alberta petrochemical companies feedstock purchase commitments that underpin new extraction investments

Need to ensure that Alberta is well positioned to capture the potential from northern gas supplies (Mackenzie gas and Alaskan gas) when they are developed

Continued efforts required to initiate a polypropylene industry in Alberta