Clouds of Uncertainty

COAA Forecast Presentation 2016
Alberta Oil Sands Investment*

$2007 Millions (adjusted for inflation)

Forecast

Significant decline in new capital


* includes construction and machinery & equipment

New
Alberta oil & gas maintenance and repair expenditures (preliminary)

$2007 Millions (adjusted for inflation)

* Includes construction and machinery & equipment

Maintenance refers to the process of maintaining equipment including: routine or on-stream work that typically does not require operations/production to shut down; and turnarounds, shutdowns or outages in which the operating unit is taken out of production.
Alberta Oil Sands Investment*

$2007 Millions (adjusted for inflation)

Sustaining capital partially offsets new capital decline

Forecast

* Includes construction and machinery & equipment

Sustaining capital refers to the periodic addition (or replacement) of capital, which is required to maintain operations at existing levels.
Union maintenance work hours
Alberta

Source: General Presidents’ Maintenance Committee for Canada; National Maintenance Council for Canada

Seasonal peaks create challenges
Construction Employment - Alberta

Oil sands investment declines; employment impacts spread across all markets
Major resource development projects (offshore platforms, nickel smelter, hydroelectric and transmission) are peaking and winding down. Second investment (offshore and mining) wave anticipated over the long run.
Next Decade: Cumulative Retirements as a % of 2015 Labour Force

<table>
<thead>
<tr>
<th>Province</th>
<th>Retirements as %</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>21.3% (250,000)</td>
<td></td>
</tr>
<tr>
<td>NB</td>
<td>27.2% (7,900)</td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>27.0% (1,700)</td>
<td></td>
</tr>
<tr>
<td>NS</td>
<td>24.5% (8,500)</td>
<td></td>
</tr>
<tr>
<td>QC</td>
<td>22.8% (48,000)</td>
<td></td>
</tr>
<tr>
<td>BC</td>
<td>22.5% (39,000)</td>
<td></td>
</tr>
<tr>
<td>NL</td>
<td>22.4% (6,000)</td>
<td></td>
</tr>
<tr>
<td>ON</td>
<td>21.2% (86,000)</td>
<td></td>
</tr>
<tr>
<td>MB</td>
<td>20.5% (8,200)</td>
<td></td>
</tr>
<tr>
<td>AB</td>
<td>18.1% (36,000)</td>
<td></td>
</tr>
<tr>
<td>SK</td>
<td>17.6% (8,700)</td>
<td></td>
</tr>
</tbody>
</table>
REGULATORY STATUS AND CONSTRUCTION PLAN

Number of Projects

- OILSANDS
- PIPELINE
- POWER
- PETROCHEMICAL

Status Categories:
- APPROVED
- PENDING APPROVAL
- UNKNOWN STATUS
- ON HOLD
- CANCELLED
- COMPLETED
On-site workforce numbers for planned new construction – Oil Sands

![Graph showing workforce numbers for planned new construction in oil sands from 2014 to 2023. The graph includes projections for 2014 Fall, 2015 Fall, and 2016 Spring. The workforce numbers fluctuate over the years, with peaks and troughs.]
On-site Workforce Numbers for Planned New Construction – Petrochemical

Number of Jobs

- 2014 Fall projection
- 2015 Fall Projection
- 2016 Spring Projection
ON-SITE WORKFORCE NUMBERS FOR PLANNED NEW CONSTRUCTION — POWER

Number of Jobs

2014 Fall projection
2015 Fall Projection
2016 Spring Projection
On-site Workforce Numbers for Planned New Construction – Pipeline

Number of Jobs

- 2014 Fall projection
- 2015 Fall Projection
- 2016 Spring Projection
ON-SITE WORKFORCE NUMBERS FOR ALL PLANNED NEW CONSTRUCTION
ON-SITE TURNAROUND AND ONGOING MAINTENANCE

Number of Jobs

- 2014 Fall projection
- 2015 Fall Projection
- 2016 Spring Projection

Years:
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
OFF-SITE MODULE FABRICATION

Number of Jobs

2014 Fall projection 2015 Fall Projection 2016 Spring Projection
OVERALL CONSTRUCTION WORKFORCE REQUIREMENTS BY CONSTRUCTION TYPE — SPRING 2016

PROJECTION

Number of Jobs

2016 Jan-17 2018 2019 2020 2021 2022 2023
E F F F F F F

TURNAROUND MAINTENANCE
ONGOING MAINTENANCE
MODULE FABRICATION
PIPELINE
PETROCHEMICAL
POWER
OILSANDS

COAA
Construction Owners
Association of Alberta
Real GDP Growth by Province

average annual compound growth, per cent

2015-18

NL | PEI | NS | NB | Que | Ont | Man | Sask | Alta | BC

Sources: Statistics Canada; The Conference Board of Canada.
OECD Commercial Crude Oil and Other Liquids Inventory Days of Supply

(days of supply)

OECD commercial crude oil and other liquids inventories

Source: Short-Term Energy Outlook, March 2016

Note: Colored band represents the range between the minimum and maximum observed days of supply from Jan. 2011 - Dec. 2015.
Barrels per day new production per rig-month

- Bakken & Eagle Ford (Av)
- Permian
- Oil Price (Right Hand Scale)
Alberta: Incremental Oil Production Increases

thousand barrels per day; share of total production

Conv. oil prod. (left axis)
Non-conv, oil prod. (left axis)
Bitumen share of total prod. (right axis)

Sources: The Conference Board of Canada; National Energy Board