Coal Development & Mineral Exploration in Alberta, Canada

Prepared by Alberta Energy for the Canada Mineral Investment Forum, Beijing

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Today’s presentation

1. About Alberta
2. Coal in Alberta - overview
3. Coal development and exploration
4. Metallic & industrial minerals
5. Summary
About Alberta

- Population – 4 million
- Province has:
  - Excellent infrastructure
  - Access to ocean ports by rail and road
- Ranked high in mining policy
- Welcomes investment
Coal in Alberta - Overview

• Coal underlies almost half the province
• Remaining reserves estimated at 33.3 Gt
  o Underground mining - 23 Gt recoverable
  o Surface mining - 10 Gt recoverable
• Nine mines currently produce 29 Mt
  o 23 Mt subbituminous coal
  o 6 Mt bituminous coal for export
Where is the coal?

Two types of coal are mined in Alberta.

1. Subbituminous Coal
   Used domestically for generating electricity.

2. Bituminous Coal
   Exported for either thermal or metallurgical use.

The two types of coal can be viewed as distinct industries in Alberta. ~95% of iron is produced using metallurgical quality bituminous coal.
Where is coal produced?

6 subbituminous mines
3 bituminous mines

Rail to port

2013: 6 million tonnes

Consumed for electricity

2013: 23 million tonnes
Coal Export

Bituminous coal is transported by rail on the CN line to Prince Rupert.

Shipped primarily to Asia – Japan is the largest importer.
# Alberta Export Coal Mines, Advanced & Exploration Projects

<table>
<thead>
<tr>
<th>Alberta Bituminous Coal Mines</th>
<th>Company</th>
<th>Type of Coal</th>
<th>Annual Production in 2013 (Mt)</th>
<th>Remaining Reserves (Mt)</th>
<th>Reserve Life (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Existing Mines</strong></td>
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<tr>
<td>Cardinal River (Cheviot)</td>
<td>Teck Coal</td>
<td>Bituminous (Metallurgical)</td>
<td>1.4</td>
<td>33</td>
<td>20</td>
</tr>
<tr>
<td>Grande Cache Surface</td>
<td>Grande Cache Coal</td>
<td>Bituminous (Metallurgical)</td>
<td>1.0</td>
<td>52</td>
<td>52</td>
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<tr>
<td>Grande Cache Underground</td>
<td>Grande Cache Coal</td>
<td>Bituminous (Metallurgical)</td>
<td>0.7</td>
<td>5.1</td>
<td>8</td>
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<tr>
<td>Coal Valley</td>
<td>Coal Valley Resources</td>
<td>Bituminous (Thermal)</td>
<td>3.3</td>
<td>45.9</td>
<td>12</td>
</tr>
<tr>
<td><strong>Advanced Projects</strong></td>
<td>Company</td>
<td>Type of Coal</td>
<td>Potential Production (Mt)</td>
<td>Reserves (Mt)</td>
<td>Reserve Life (years)</td>
</tr>
<tr>
<td>Vista</td>
<td>Coalspur Mines</td>
<td>Bituminous (Thermal)</td>
<td>12.0</td>
<td>313.0</td>
<td>26.1</td>
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<tr>
<td>Summit</td>
<td>Maxim Power</td>
<td>Bituminous (Metallurgical)</td>
<td>1.3</td>
<td>119.3</td>
<td>15</td>
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<tr>
<td><strong>Exploration Projects</strong></td>
<td>Company</td>
<td>Type of Coal</td>
<td>Production (MT)</td>
<td>Reserves (Mt)</td>
<td>Reserve Life (years)</td>
</tr>
<tr>
<td>Fox Creek</td>
<td>Alberta Coal Corporation -subsidiary of Natasa Mining</td>
<td>Subbituminous (Thermal)</td>
<td>n/a</td>
<td>Measured &amp; Indicated : 847</td>
<td>n/a</td>
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<tr>
<td>Blackstone</td>
<td>Black Eagle Mining</td>
<td>Bituminous (Metallurgical)</td>
<td>n/a</td>
<td>Measured &amp; Indicated : 275</td>
<td>n/a</td>
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<tr>
<td>Ram &amp; Scurry Ram</td>
<td>Ram Coal</td>
<td>Bituminous (Metallurgical)</td>
<td>n/a</td>
<td>Ram/Scurry Ram Measured &amp; Inferred: 359/84.8</td>
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<tr>
<td>Palisades Property</td>
<td>Altitude Resources</td>
<td>Bituminous (Metallurgical)</td>
<td>n/a</td>
<td>Measured &amp; Indicated : 10.1</td>
<td>n/a</td>
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<tr>
<td>Elan Property</td>
<td>Altitude Resources</td>
<td>Bituminous (Metallurgical)</td>
<td>n/a</td>
<td>Measured &amp; Indicated : 62: Inferred : 84</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Advanced coal projects

Black Eagle Mining (Blackstone Project)

• Blackstone property located west-central Alberta is 100% owned by Black Eagle Mining.
• Significant underground metallurgical coal deposit near rail network.
• Measured & Indicated coal resources of 176 Mt with a total coal resource of 275 Mt.
• High quality mid-volatile metallurgical coal.
Advanced coal projects

Coalspur Mines Limited (Vista Project)
• Measured & indicated coal reserves of 566 Mt.
• Low sulphur, high volatile bituminous coal.
• Has received regulatory approval.
• Initial production 6 Mt expanding to 12 Mt with a 20+ year mine life.
• Agreement with Ridley Terminals - 13.5 Mt for 21 years.
• Will be North America’s largest thermal open pit export coal mine.
Advanced coal projects

Summit Coal Mine Project

- Located adjacent to the town of Grande Cache.
- Have received all required regulatory approvals for production of 1.3 Mtpy.
- Measured & Indicated coal resources of 120 Mt with a Proven and Probable reserve of 19 Mt.
- Mid- to low-volatile bituminous metallurgical coal.
Metallic and industrial minerals

- Currently over 7 million hectares of lands under permit.
- Companies exploring for a variety of minerals including diamond, uranium, precious & base metals, iron, lithium, sulphur & silica.
Advanced mineral projects

Ironstone Resources (Clear Hills Project)

• Development company focused on iron and vanadium
• Project located in west-central Alberta near rail network
• 558 Mt of compliant resource with iron (33%) and vanadium pentoxide (0.20%)
• Targeted annual production of 2.5 Mt high-value hot briquetted iron (96%Fe) and 15kt of vanadium pentoxide (V2O5)
Advanced mineral projects

DNI Metals Inc. (Black Shale Project)

• Located 120 km north of Fort McMurray, Alberta.
• 36 contiguous permits held 100% by DNI Metals.
• Developing a large bulk mineable polymetallic black shale mineral resource (base metals, U, Li-Sc-Th & REE recoverable by heap leaching).
• Buckton, Buckton South & Asphalt Zones > 3.8 billion tonnes inferred resource.
• Metals collectively recoverable by bioleaching.
• Evaluating fracsand potential of sandstone units.
Summary

- Alberta has significant reserves of coal and good potential for economic deposits of metallic and industrial minerals.
- Alberta is rated high for its mining policies and welcomes international investment.
- Alberta has excellent infrastructure and access by rail and road to Pacific Ocean ports in British Columbia.
- For more information go to www.energy.alberta.ca.
Thank you.

www.energy.gov.ab.ca
CMD.Energy@gov.ab.ca