



Freedom To Create. Spirit To Achieve.

Alberta's Value Added Oil Sands Opportunities and Bitumen Royalty in Kind

Government
of Alberta ■

The Bitumen Resource as a Feedstock for Upgrading

Alberta's opportunity rests on two global competitive advantages - feedstock and access to markets

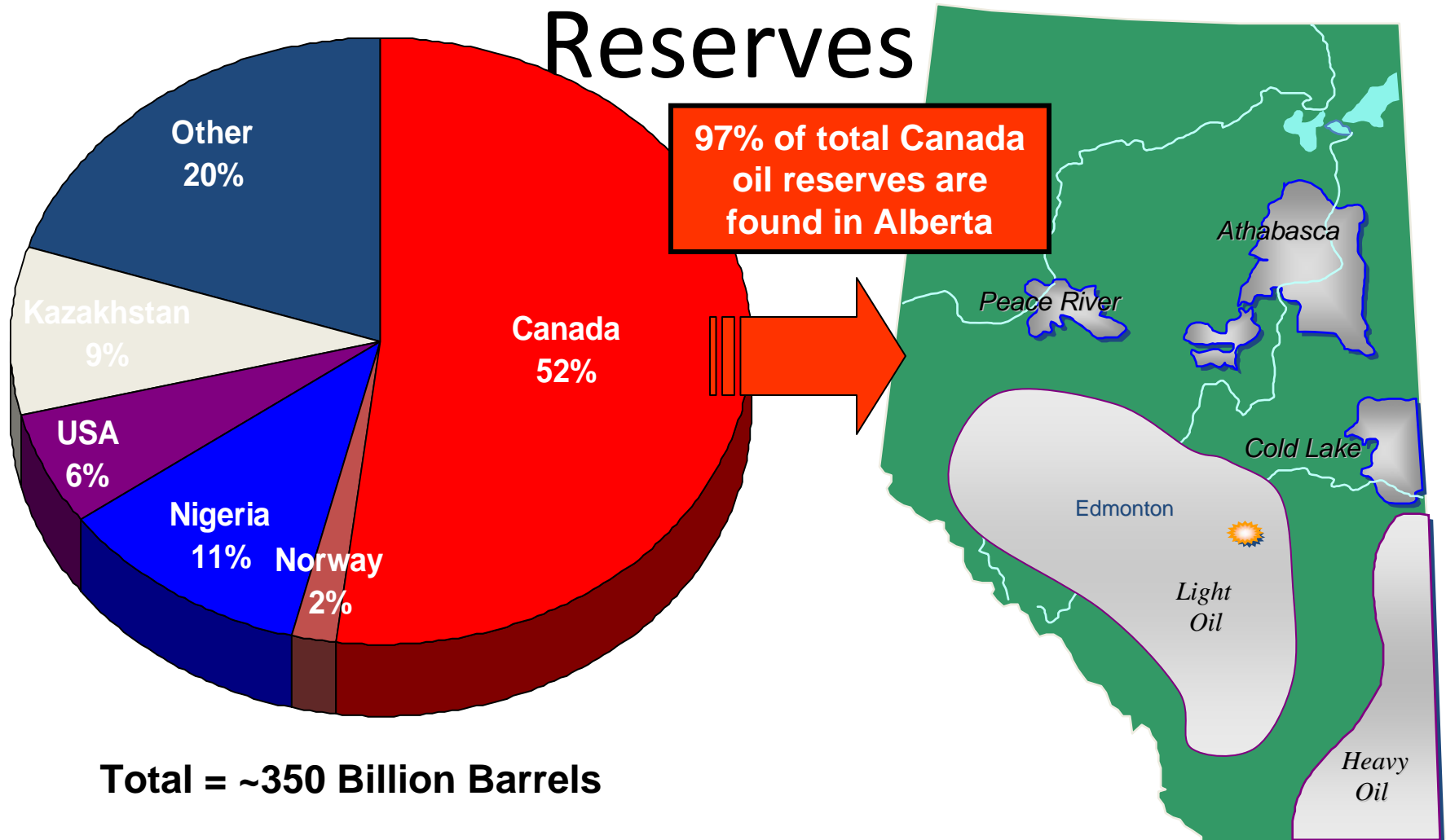
MARKETS

- Growth in world demand
- Proximity to largest market in the world (US)
- Rail and pipeline access to Asia and North America
- Synergies with existing petrochemical industry in Alberta

FEEDSTOCK

- Size of the Resource
 - 173 billion barrels recoverable reserves
- Properties of the Resource
 - Integrated processing offers economic and environmental benefits

“Investable” World Oil Reserves



“Investable” represents reserves associated with political regimes open to foreign investment (excluding Iraq)

Factors Behind Alberta's Value-add Vision

- The need to diversify our feedstock and market opportunities
- Alberta's petrochemical industry needs alternative sources of long-term secure feedstocks to sustain operations
- The industrial model in Alberta may change in the future to non-integrated facilities that are focused on specific operational expertise
- New technology opportunities will assist in reducing costs and providing low-cost feedstocks to support our industries
- Cluster development is successful all around the globe and are built on models similar to Alberta
- No one can predict what the future will bring and Alberta needs to be flexible to handle those changes

The Value-Add Strategy Opportunity for Alberta

Moving the oil sands up the value chain to enhance product and market diversification



- Production of the bitumen from the oil sands is expected to reach 3 million bpd by 2020



- Upgrading and Refining of the bitumen produces by-products that can be used as low-cost feedstock for further value-add operations



- Alberta has the potential to become the next world-class eco-industrial integrated hydrocarbon processing hub based on the oil sands

2008 Statistics

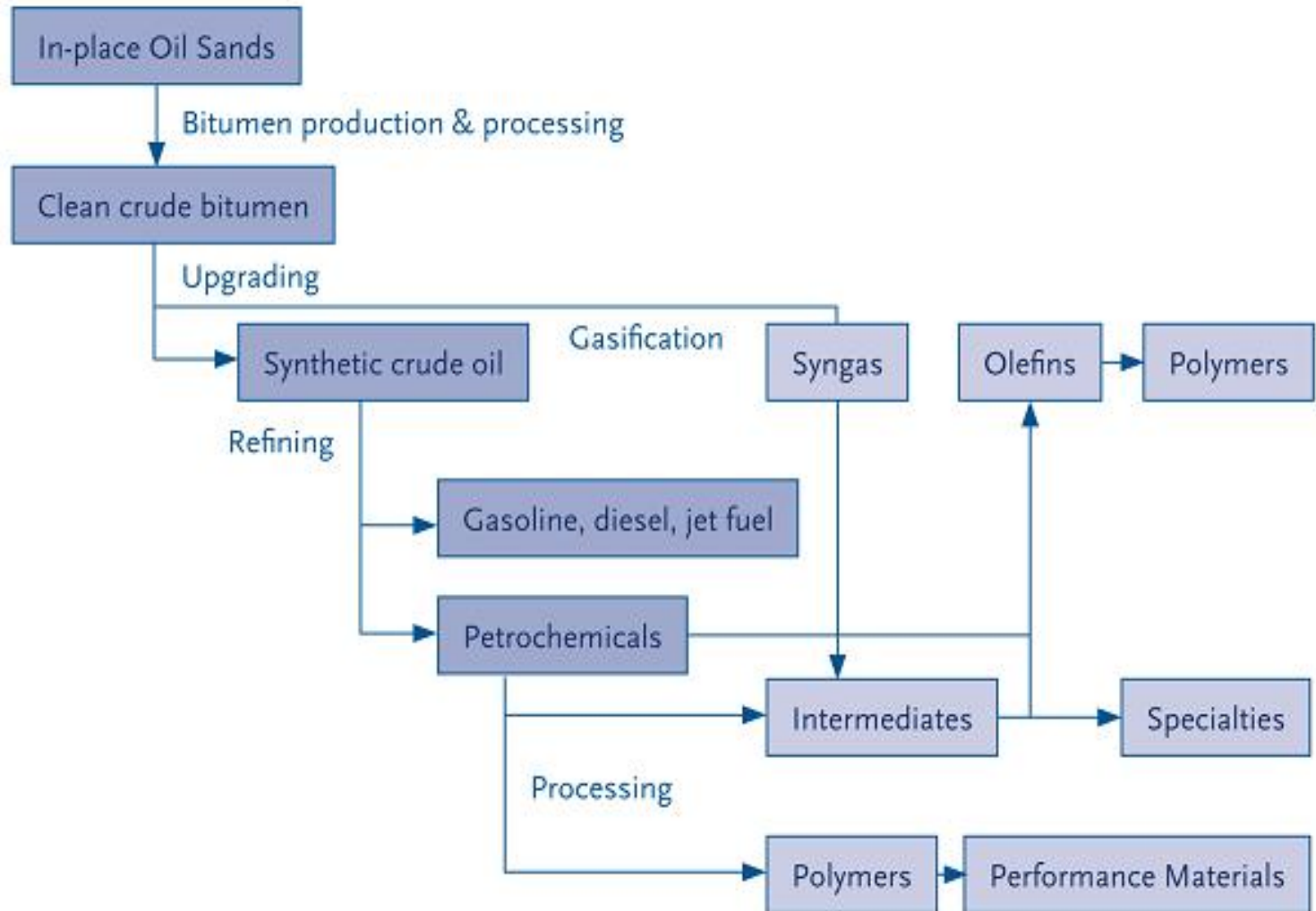
- 88 oil sands projects
 - 1.3 million bpd production

- 3 bitumen upgraders
 - 900 thousand bpd capacity

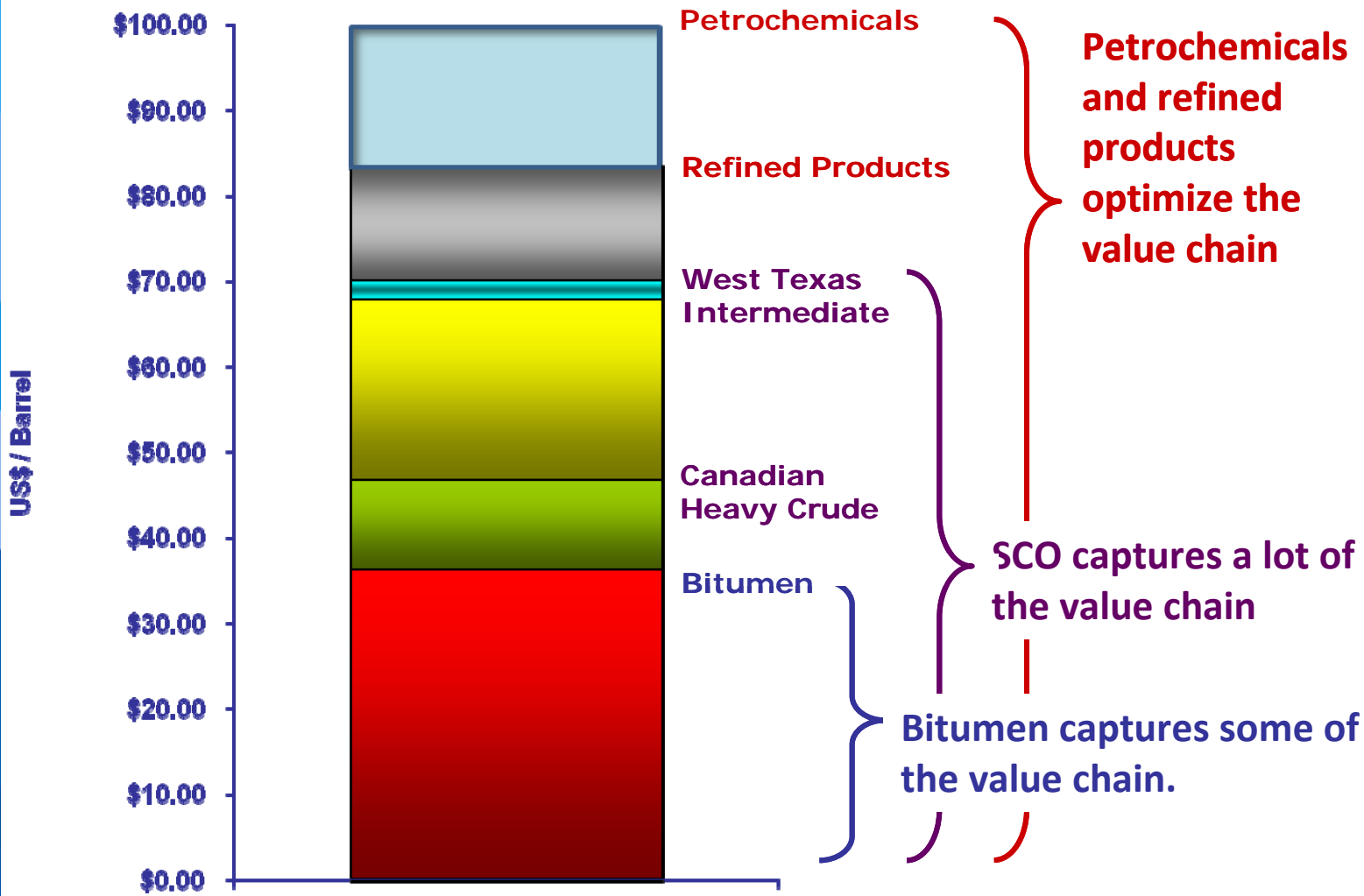
- 5 oil refineries*
 - 450 thousand bpd capacity
- 5 major petrochemical facilities
 - 9 billion pounds production

Oil Sands Value Chain

Hydrocarbon value chain



Why? The Direct Economic Benefit



Economic Benefits – Oil Sands

**Economic Benefits of Bitumen and SCO Development
Mining, Insitu and Upgrading**
\$186 Billion Investment from 2010 to 2030

	Alberta	Rest of Canada	Total Canada	Outside Canada	Grand Total
Cumulative GDP (Trillion 2008\$)	2.48	0.59	3.07	0.35	3.42
Employment (Thousand Persons)	638	317	955	196	1,151
	AB Gov't	Federal Gov't	Other Prov. Gov't	Municipal Gov't	Total Canada
Cumulative Gov't Revenues (Billion 2008\$)	211	192	73	61	537

Source: CERI Report: Economic Impacts of Alberta's Oil Resources – September 2008 Update

Economic Benefits – Value-add Chain

Economic Benefits of Value-add Development

Mining, Insitu, Conv Oil, Upgrading, Refining, Petrochemicals

\$314 Billion Investment from 2010 to 2030

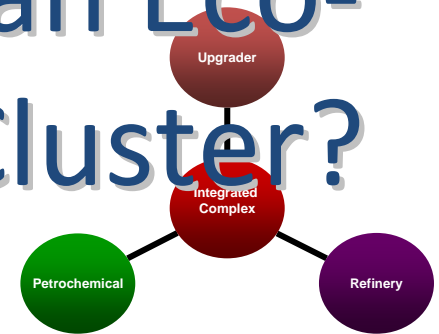
	Alberta	Rest of Canada	Total Canada	Outside Canada	Grand Total
Cumulative GDP (Trillion 2008\$)	3.37	0.87	4.24	0.77	5.01
Employment (Thousand Persons)	1,053	509	1,562	430	1,992
	AB Gov't	Federal Gov't	Other Prov. Gov't	Municipal Gov't	Total Canada
Cumulative Gov't Revenues (Billion 2008\$)	259	280	122	86	748

Source: CERI Report: Economic Impacts of Alberta's Oil Resources – September 2008 Update

Strategic Rationale for a Hydrocarbon Cluster in Alberta

- Wealth creation and more job opportunities
- More diverse slate of exported products
- Hedge against commodity downturns
- Reduces life cycle carbon footprint
- Builds Alberta companies in engineering, project management, construction, metal fabrication and logistics
- Deploys leading edge technologies
- Sustains Alberta's industry into the future

Why Does Alberta want an Eco-industrial Hydrocarbon Cluster?



Economic Opportunity

- The addition of integrated upgrading, refining and petrochemical production adds value to the bitumen resource in Alberta and creates product and market diversification for long-term benefits to the Province.

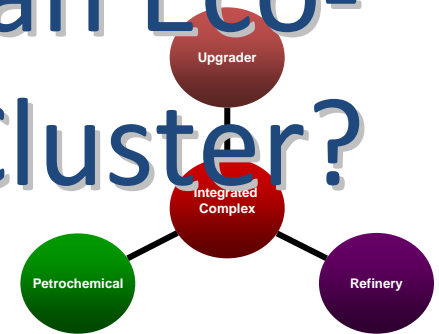
Environmental Responsibility

- Integration of industrial facilities with new technologies promotes increased efficiencies, enhanced synergies and reduces the overall environmental footprint.

Social Benefits

- Adding value in Alberta creates benefits such as employment creation and revenue generation to invest in social programs that promote in the development of sustainable, healthy, safe and vibrant communities.

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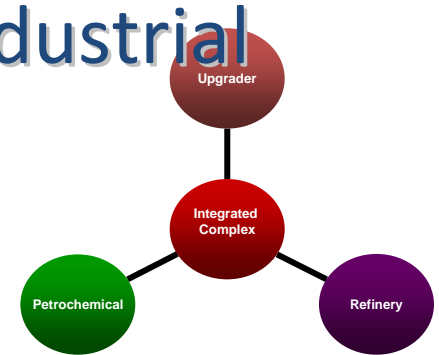
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Environmental Benefits of Industrial Integration

- **Integrated oil sands processing delivers significant environmental benefits through a reduced environmental footprint and optimized operational efficiencies:**
 - Coordinated management of:
 - Infrastructure needs
 - water resources
 - energy inputs
 - land use
 - emission outputs
 - waste treatment
- **A study that analyzed the environmental benefits of integrated facilities compared to standalone upgrading, refining and petrochemical plants resulted in:**
 - Total emission levels for a standalone facilities are 50% greater than integrated facility
 - Water demand for standalone projects are up to 60% greater than for integrated facility



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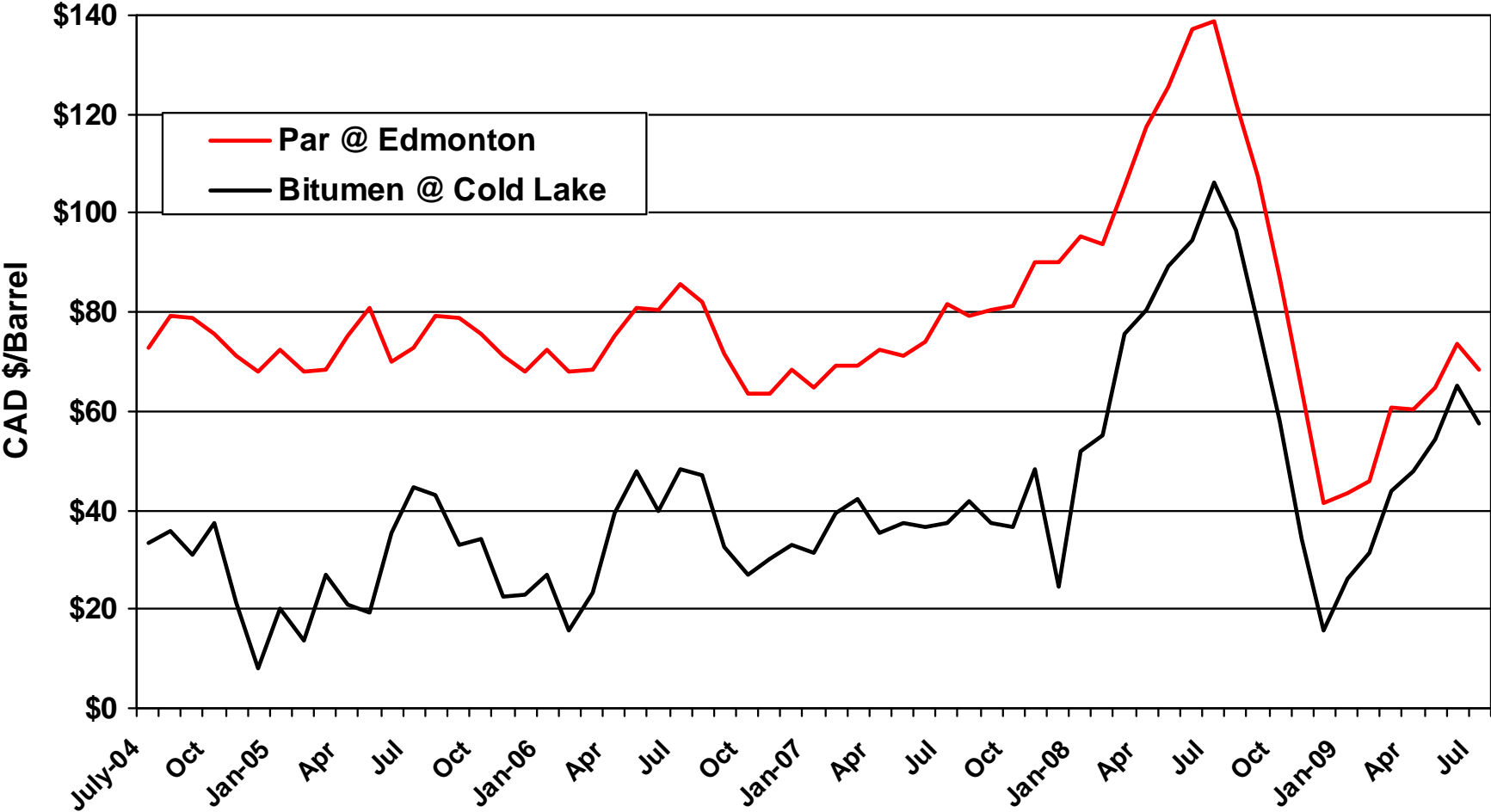
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Upgrading in Alberta was Economic

- The bitumen market was once limited to a few large US refineries with significant market power
- Upgrading in Alberta reduced the exposure to volatile bitumen prices since SCO was priced against light oil
- Upgrading in Alberta resolved the problems of diluent cost, shipping and availability

Bitumen-Par Differentials

July 2004 to July 2009



Current Upgrading Economics are Challenging

- More US refining and pipelines became available
- Bitumen netbacks improved as Mexican and Venezuelan crude are harder to acquire
- Capital costs in Alberta escalated
- Global economic uncertainty

The result is that today, bitumen extraction without upgrading in Alberta is a preferred strategy for many companies

In the Near Term, Refiners are Under Pressure

- Lower demand led to global excess refining capacity, in the short term, U.S refiners have reduced production and delayed capital expansions
- Increased U.S capacity to process heavy crudes has increased demand and prices for Alberta heavy crude
- Supplies of crude oil from Mexico and Venezuela into the U.S. have decreased
- Rationalization and consolidation of refining assets in North America will occur and new large world-scale integrated facilities will pre-dominate
- Fuel demand in the US is expected to rebound and follow economic recovery

Petrochemical Industry is Reassessing Long-Term Strategies

- New capacity in the Middle East and Asia must be absorbed before new plants will proceed. Some US capacity is idle.
- North American chemical producers can compete against global players if their feedstock costs are low
- Optimism is being expressed in the chemical industry for an economic rebound in 2010
- Many companies are reassessing their asset base, feedstock sources and planning strategic decisions to lean their operations
- Alberta ethylene producers are concerned about ethane supply. New US shale gas and low gas prices could lead to declines in Alberta natural gas exports to the US Midwest. Consequently, less natural gas will flow through straddle plants and less ethane will be extracted
- There is potential to extract ethane from oil sands upgrading plant gases (i.e. Suncor and Williams)

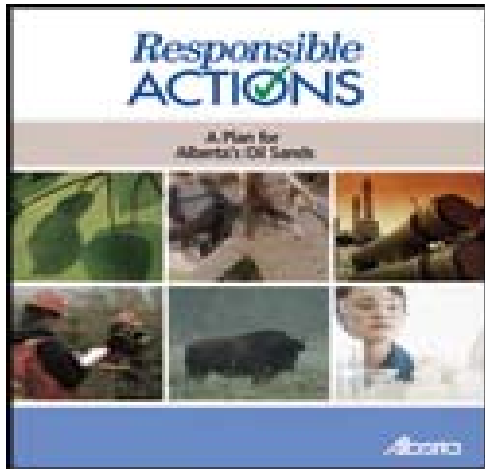
Government Strategies Set the Stage for the Next Level of Development in Alberta



Address the Environmental Footprint

Extend our Role Along the Value-Chain

Develop and Deploy Technology



Develop Alberta's oil sands in an environmentally responsible way

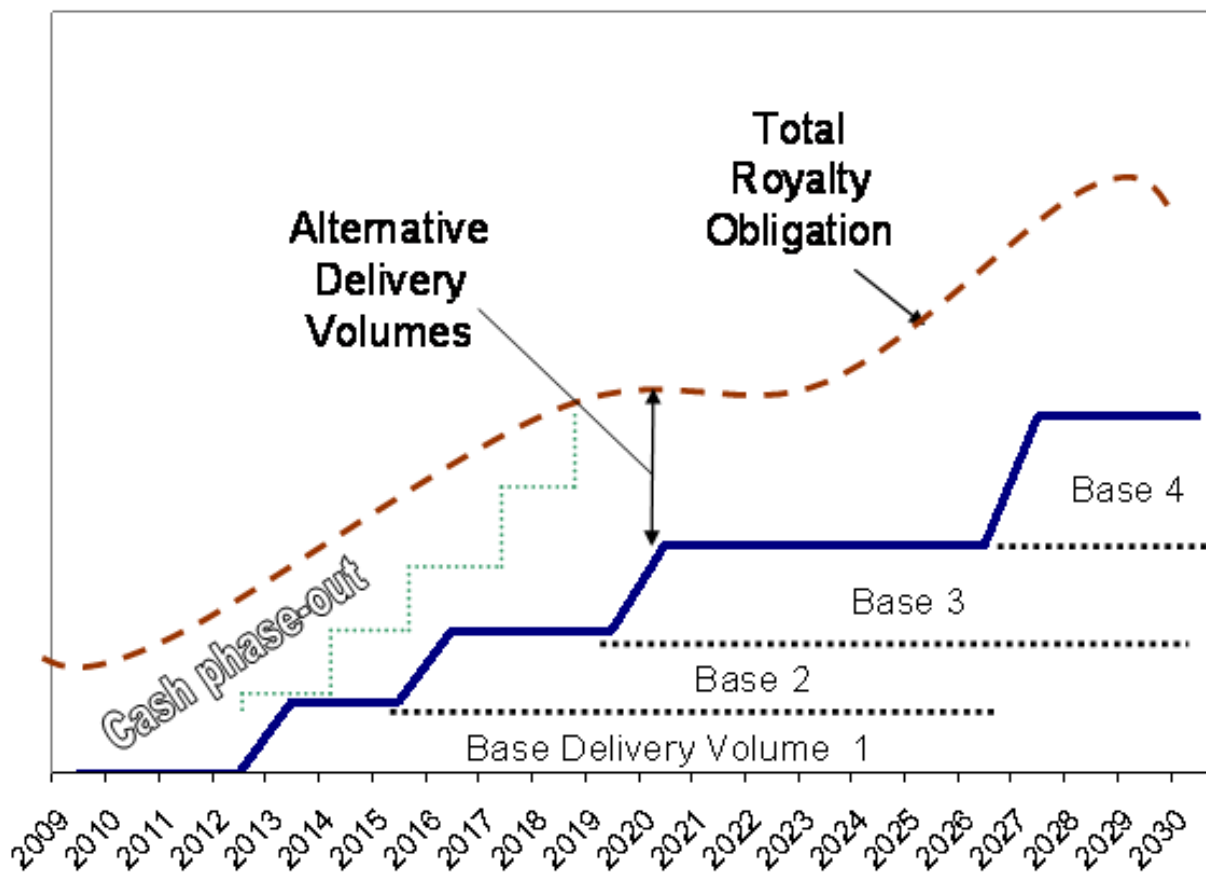
Maximize long-term value for all Albertans through economic growth, stability, and resource optimization

Government is taking steps towards Realizing the Value-add Opportunity for Alberta

- Provincial Energy Strategy and Oil Sands Strategy
- Bitumen Royalty In-Kind Policy
- Carbon Capture and Storage Fund
- Integrated Industrial Site Planning
- Technology Funding and Technical Feasibility Analysis
- Value-add Policy Development

Conceptual Illustration of Bitumen Royalty Obligation Allocated Between Base and Alternative Delivery Volumes

000's of barrels of Bitumen Royalty per day



BRIK Contractual Parameters

- Purchase at market price or Process Crown bitumen
- Specify between 50,000 to 75,000 bpd of Crown bitumen supply
- Capacity – new facility or expansion with minimum of 100,000 bpd of bitumen
- Maximum Crown volume share of total facility capacity = 75%
- Must process to at least low-sulphur Synthetic Crude Oil (30 degree API)
- Term of 15 to 30 years Crown bitumen supply
- Term start between Jan 1, 2013 and Dec 31, 2016

BRIK Contractual Parameters (Cont.)

- Not contingent on further volume commitments, tax or royalty treatment.
- Alberta location (Alberta Industrial Heartland preferred in criteria for logistics and integration opportunities)
- The Processing Facility must be sufficiently flexible to accommodate variations in bitumen quality.

BRIK RFP Timelines

- Issuance of Initial RFP: July 21, 2009
- Information Meeting – Initial RFP: August 6, 2009
- Final Date for Comments on Initial RFP: August 31, 2009
- Issuance of Final RFP: Sep 30, 2009
- Final Date for Submission of Proposals: Dec 2, 2009
- Announcement of Selected Proposal (s): March 31, 2010
- Signing of Processing Agreement: 2010
- BRIK program comes into effect: 2012
- Supply of Bitumen begins under Processing Agreement: 2013 - 2016

Implications for Alberta

- In the short term low light/heavy oil price differentials support bitumen extraction in Alberta, but not upgrading or refining
- Lower construction costs now materializing
- If world heavy oil production increases as expected, light-heavy price differentials may widen thus improving upgrading/refining economics
- Petrochemicals – opportunities for expansion are limited without additional feedstock
- Off-gases from upgrading can become feedstock for petrochemicals
- Niche opportunities for diesel and polypropylene production could be accessed
- Longer term – large world scale integrated facilities based on low cost feedstock (bitumen) can be competitive in North America

Commitment to Value-add

The oil sands is a long-term business, not based on short-term fluctuations.

Two areas that government can influence direction:

1. Feedstock development
2. Facilitating investment
 - **The current economic environment may provide opportunities for oil sands and value added development to proceed in an environmentally sustainable and more strategically planned manner.**
 - **The Alberta government is focused on enhancing value-added activity, increasing innovation and building a skilled workforce to improve the long-run sustainability of Alberta's economy.**
 - **A portion of bitumen production will continue to be exported to markets outside Alberta. However, there is a tremendous opportunity for an expanded Alberta upgrading, refining and petrochemicals industry to be based upon Alberta's growing oil sands production.**

Our challenge is to find a balance that is most beneficial to Alberta.