

Alberta's Energy Markets: Opportunities and Challenges

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Key findings in the IEO2011 Reference case

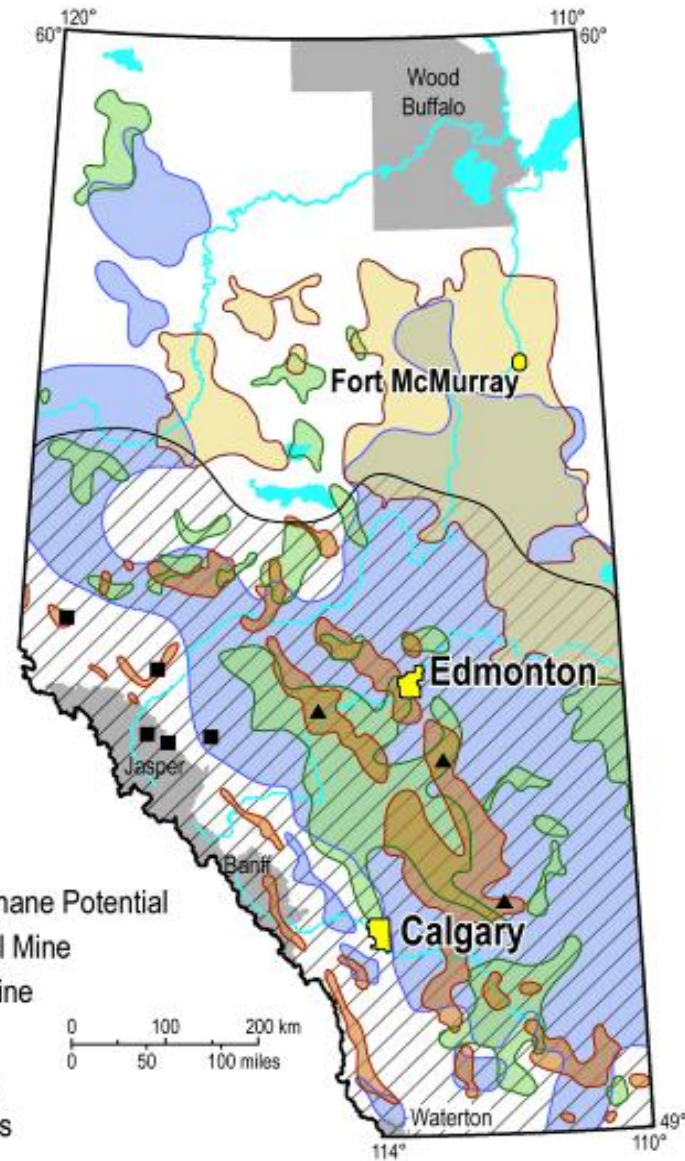
- World energy consumption increases by 53% between 2008 and 2035 with half of the increase attributed to China and India
- Renewables are the world's fastest-growing energy source, at 2.8% per year; renewables share of world energy grows to roughly 15% in 2035
- Fossil fuels continue to supply almost 80% of world energy use in 2035
- Liquid fuels remain the largest energy source worldwide through 2035, but the oil share of total energy declines to 28% in 2035, as sustained high oil prices dampen demand and encourage fuel switching where possible and modest use of liquid biofuels

Overview of Alberta's Energy Industry

Energy & Alberta



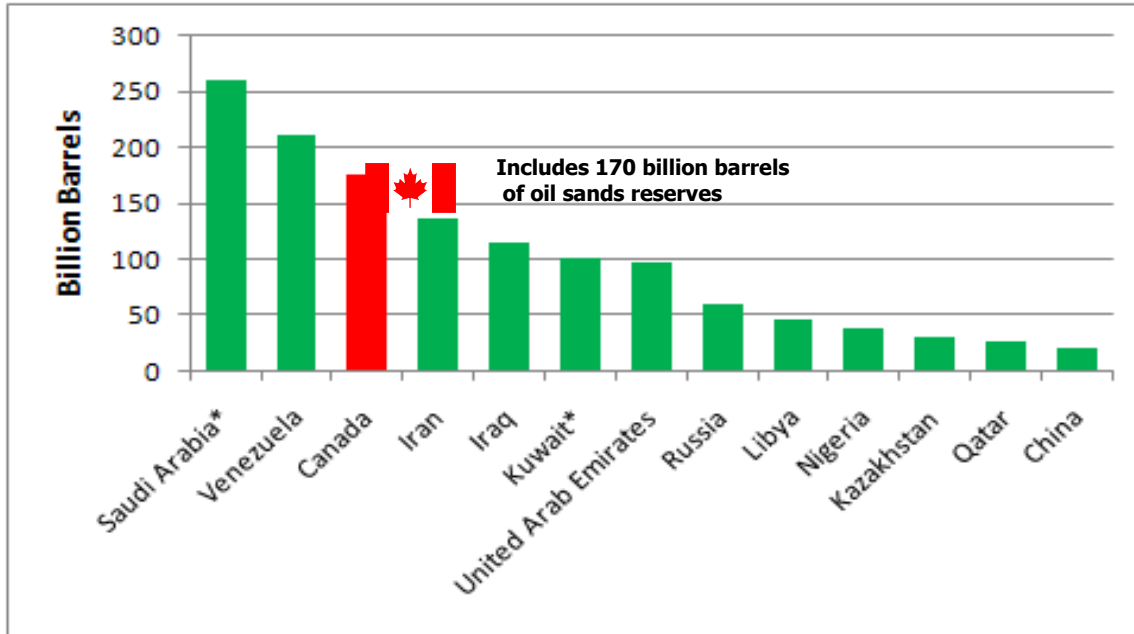
Generalized Areas of Hydrocarbon Resources



	Oil* (B bbls)	Gas* (Tcf)	Oil Sands (B bbls)	Coal (B tonnes)
Remaining Established	1.4	40	170	37
Ultimate Potential	19.7	223	315	683

* Excludes oil and gas in tight, coal, and shale formations

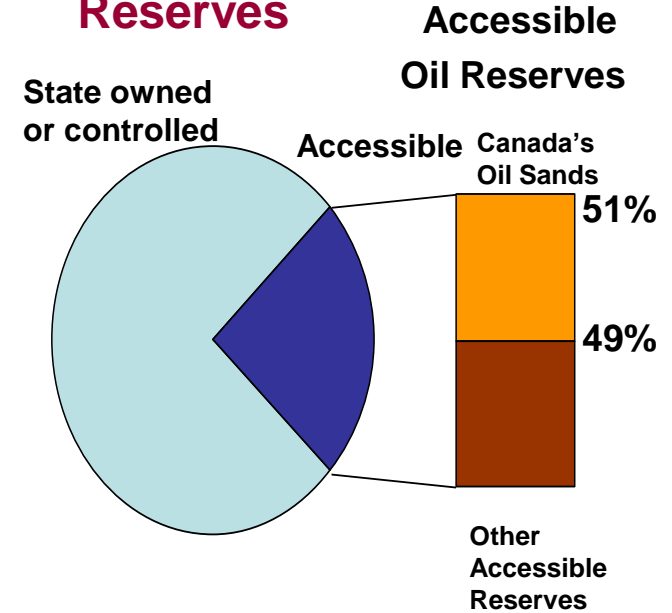
Crude Oil Proved Reserves



Source: Oil & Gas Journal, December 2010

* Excluding one-half of the reserves in the Neutral Zone.

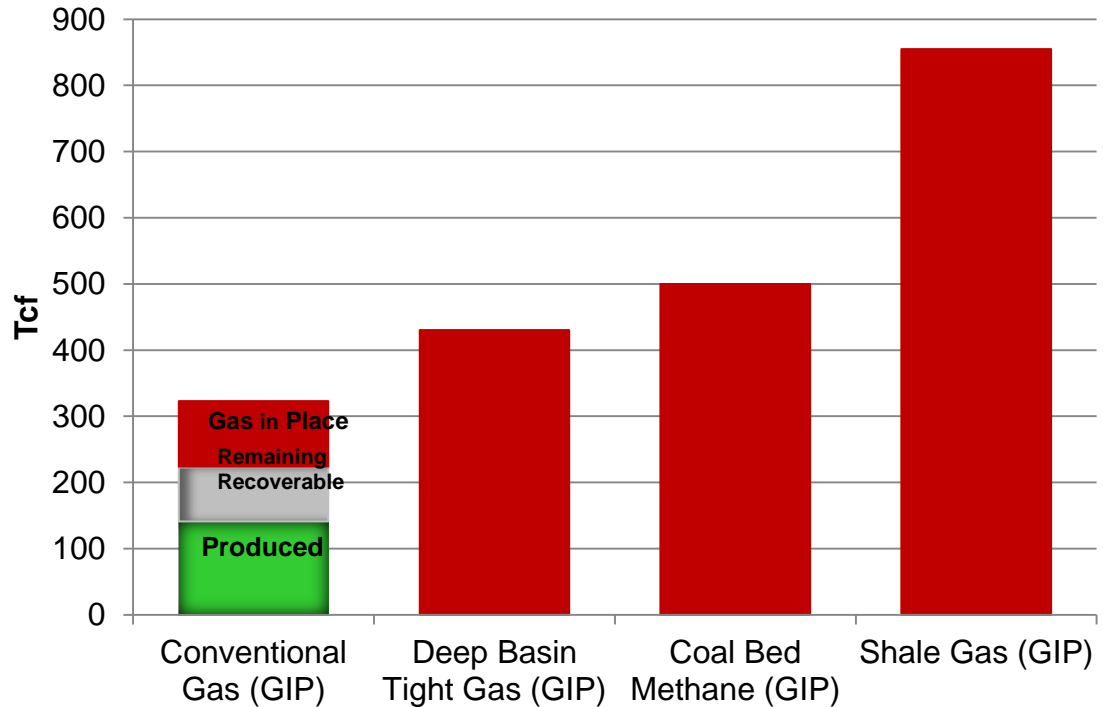
World Oil Reserves



Alberta's Natural Gas Resources



Source: Canadian Society for Unconventional Gas

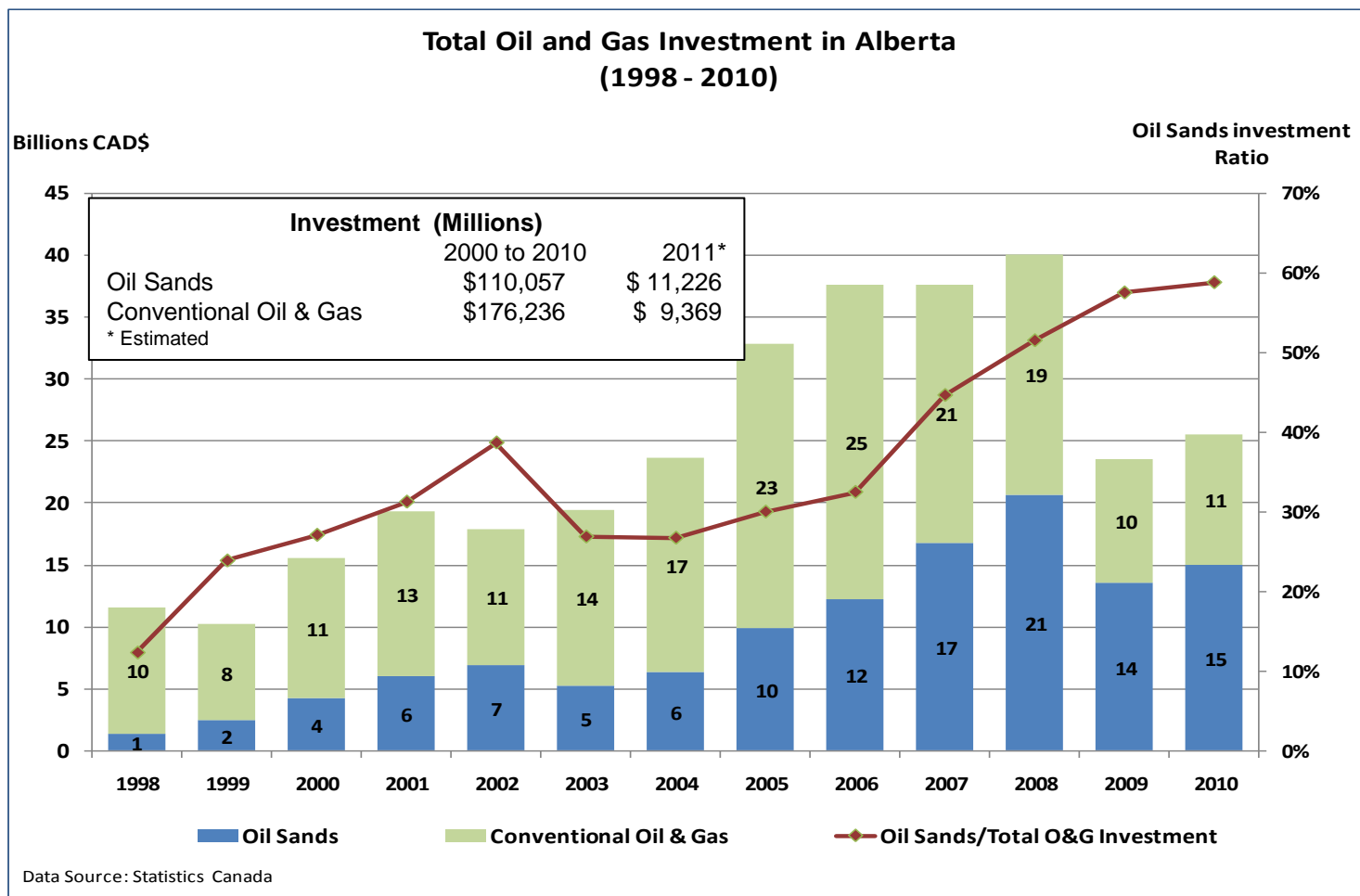


Source: Energy Resource Conservation Board, Petrel Robertson, Gas Technology Institute (GTI)

GIP: Gas in Place is the total gas volume believed to be contained in the reservoir.

NGC: Natural gas from coal (CBM)

Oil and Gas Investment in Alberta



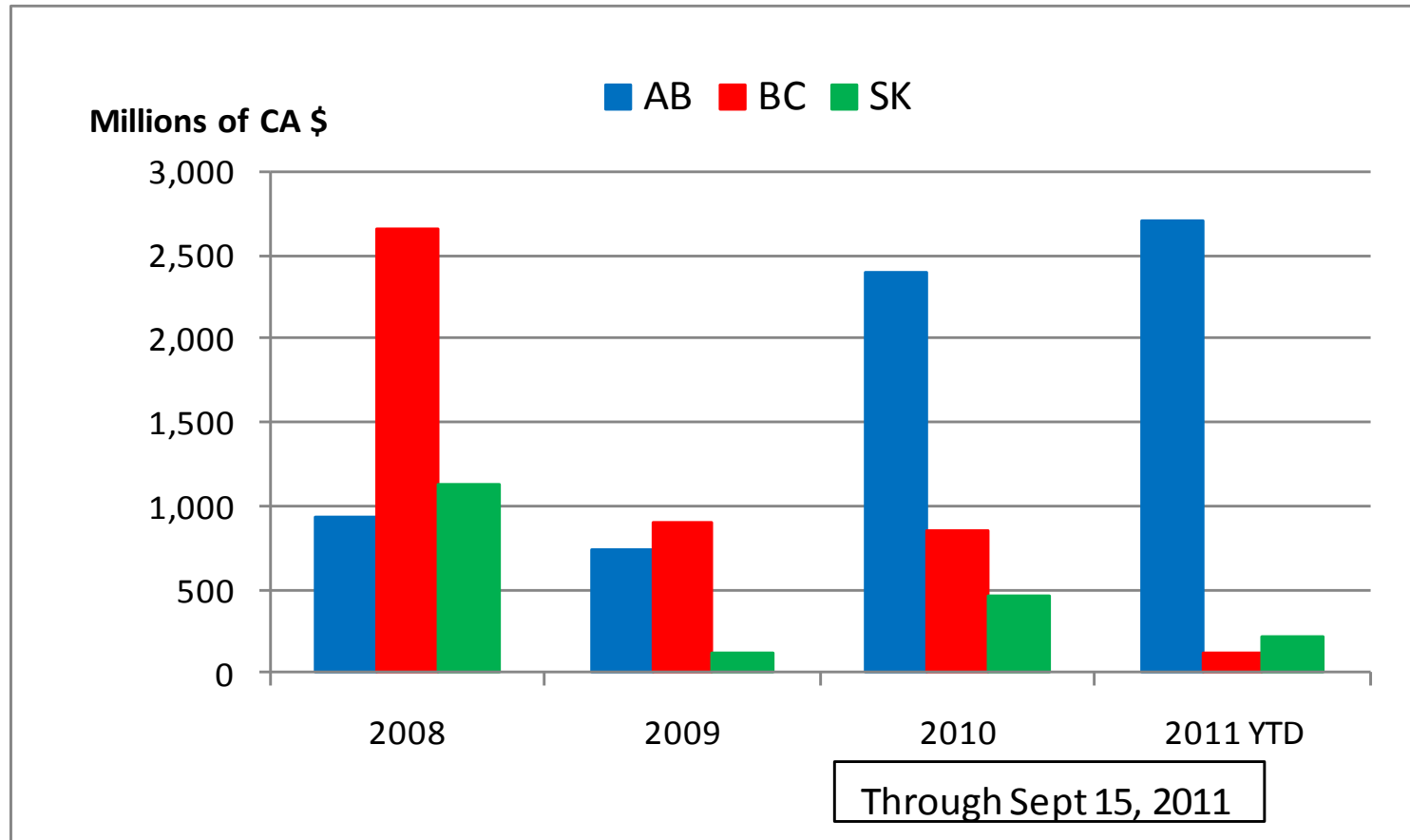
Economic Impacts of the O&G Industry

Over the next 25 years the O&G Industry will contribute:

- GDP: Canada \$3.6 trillion
Alberta \$2.5 trillion
- Combined taxes: \$691 billion
- Royalty: Western Canada \$429 billion
Alberta \$295 billion
- Employment : Canada - 24.5 million person-years
Alberta - 14.1 million person-years

Source: Canadian Energy Research Institute

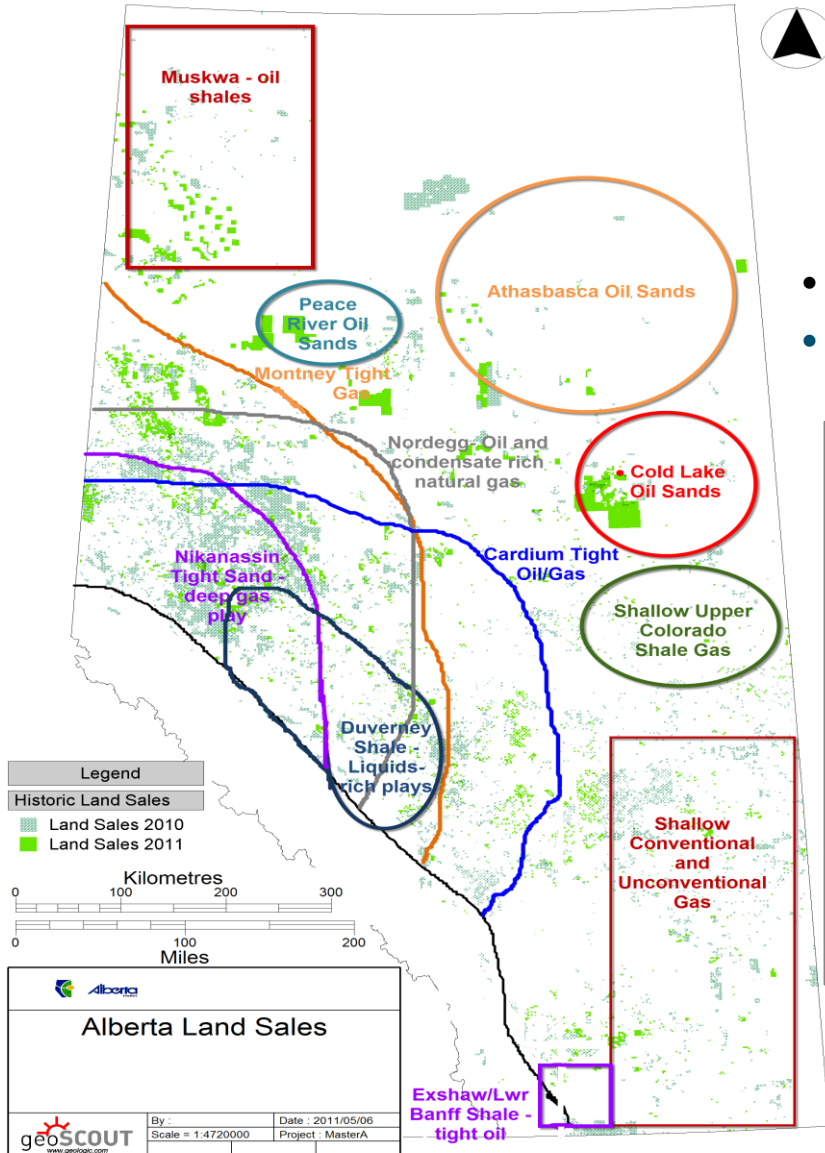
Western Canadian Land Sales



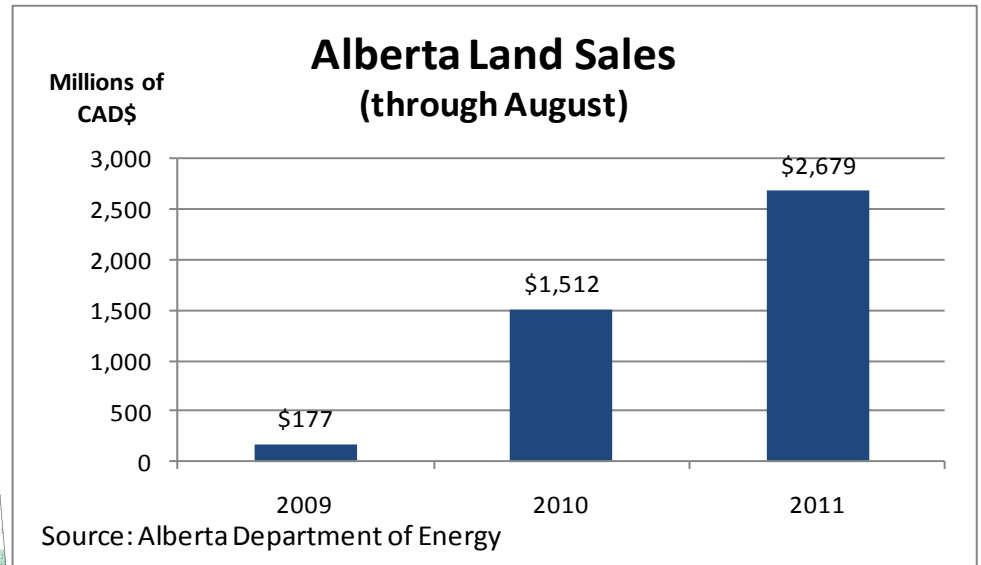
Source: Alberta Department of Energy



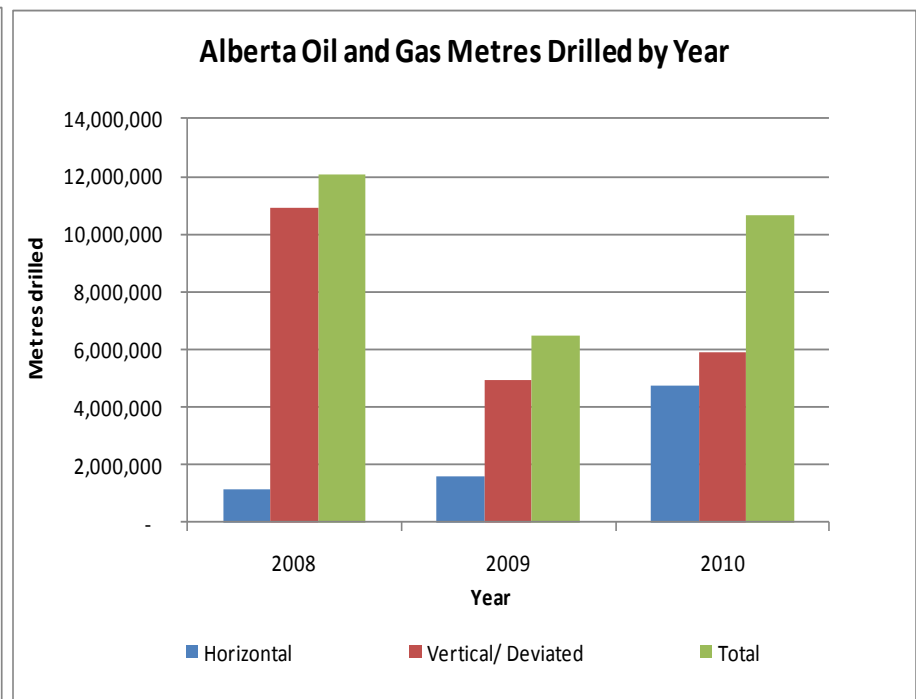
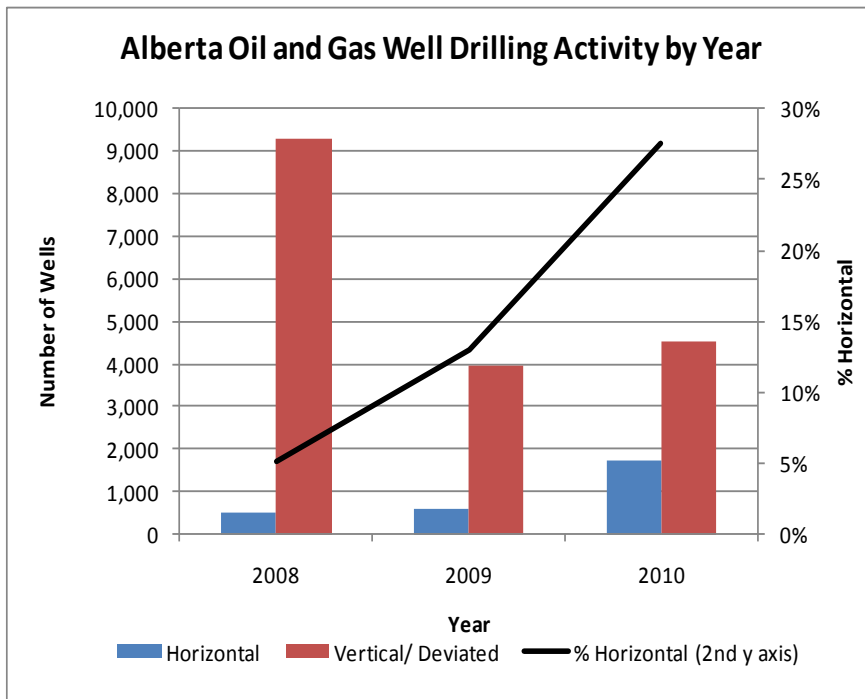
Emerging Resources



- Land sales is an indicator of future activity
- Total 2010 land sales over \$2.3 Billion



Alberta Drilling Activity



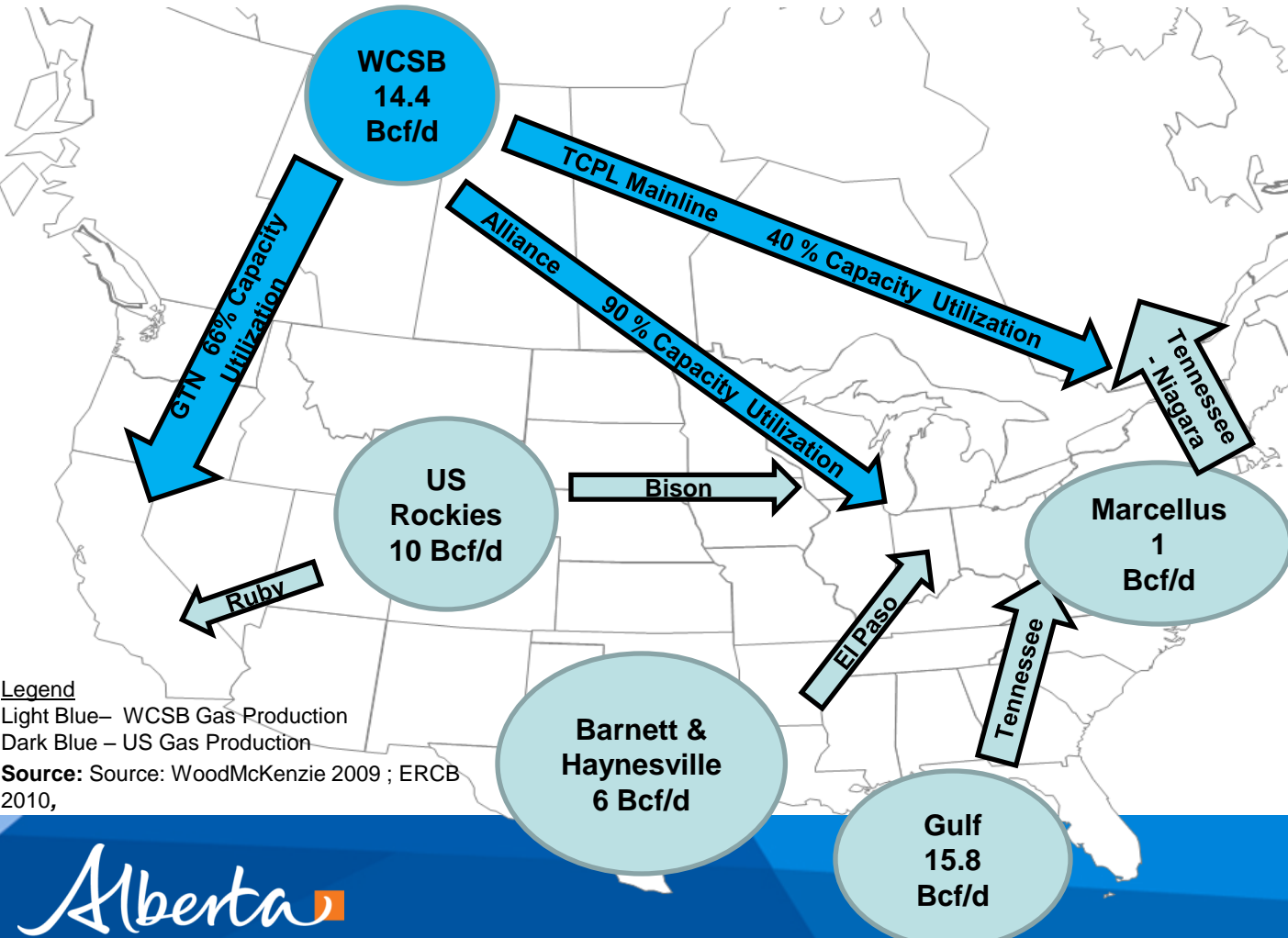
Source: Alberta Department of Energy

- Increasing horizontal drilling reflecting shift towards unconventional oil and gas development in shale and tight plays
- Activity has shifted towards tight oil in Alberta

Energy Markets and Prices

Current Alberta Natural Gas Markets

Alberta production
year 2010: 11.31 (bcf/d)

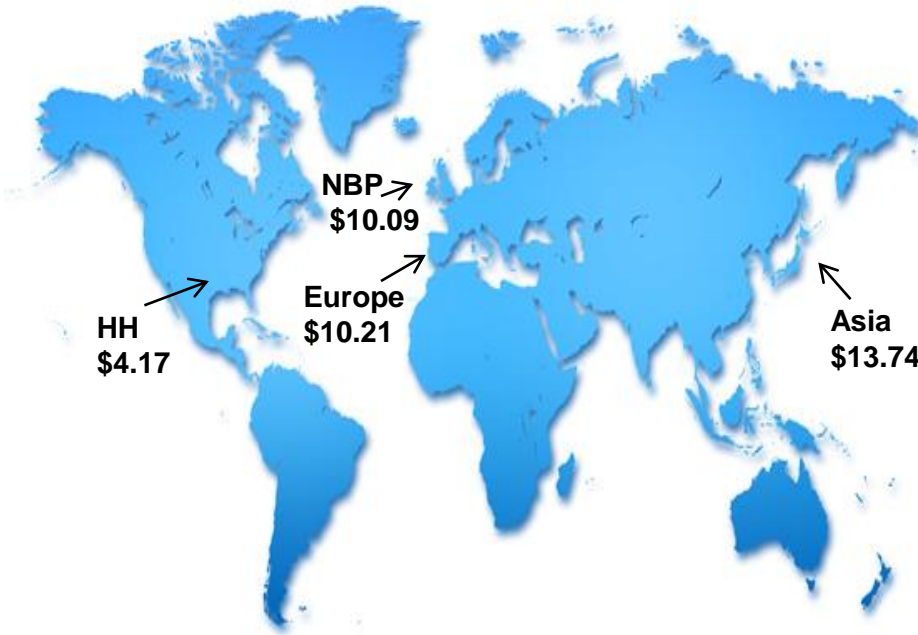


Alberta Disposition – 2010

Market	Bcf per Day
PADD 1	0.26
PADD 2	2.87
PADD 3	0.00
PADD 4	0.40
PADD 5	1.26
Eastern Canada	1.76
Western Canada	1.07
Total	7.63

Legend
 Light Blue– WCSB Gas Production
 Dark Blue – US Gas Production
 Source: Source: WoodMcKenzie 2009 ; ERCB 2010,

Natural Gas Prices and Market Diversification

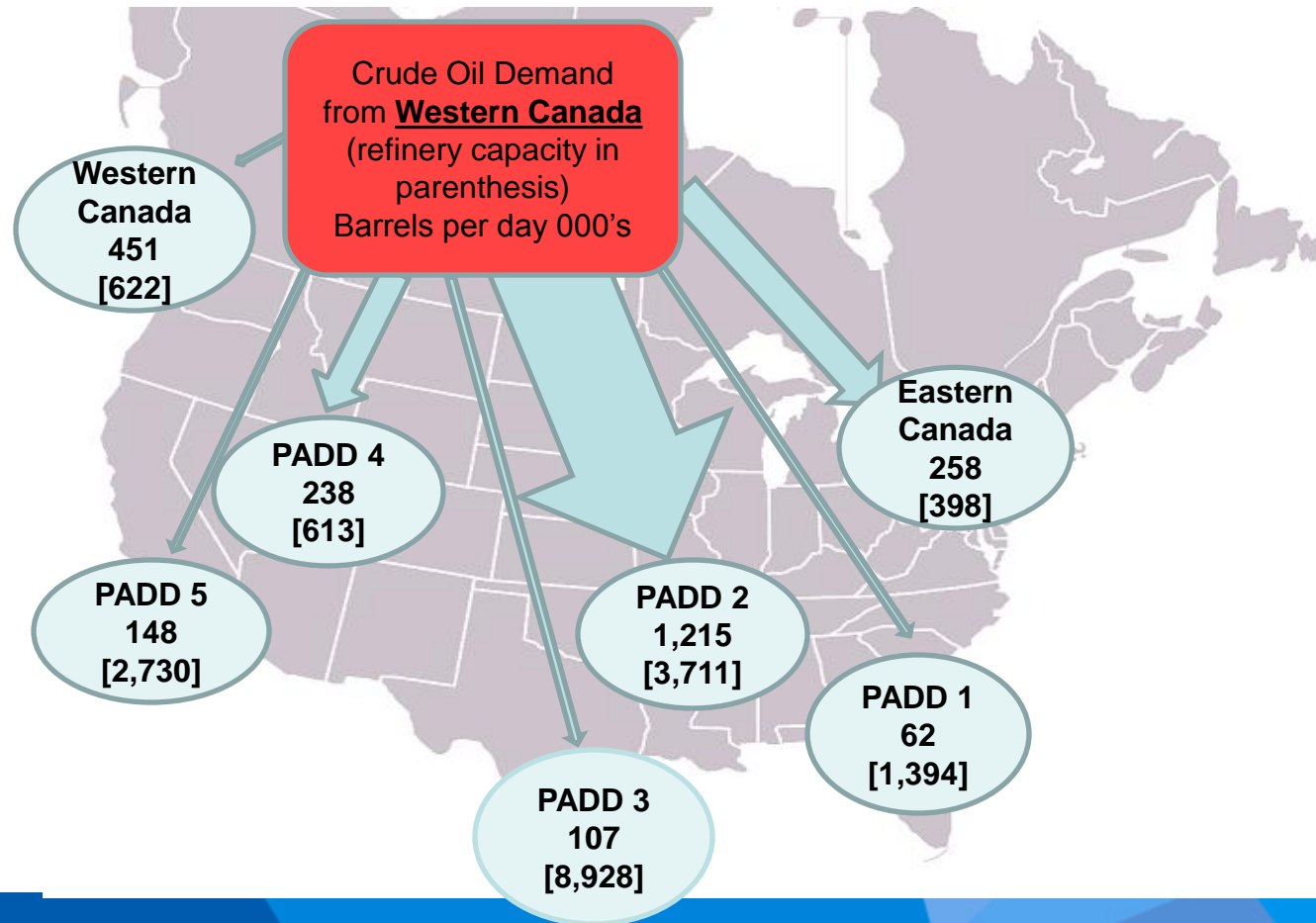


- Natural gas is a continental commodity as LNG transports a small portion of total natural gas production
- Price differentials have widened as natural gas prices in other international markets are tied to higher oil prices
- Market diversification (LNG) can increase the price Alberta producers received for natural gas and reduce the risk associated with depending on the North American market

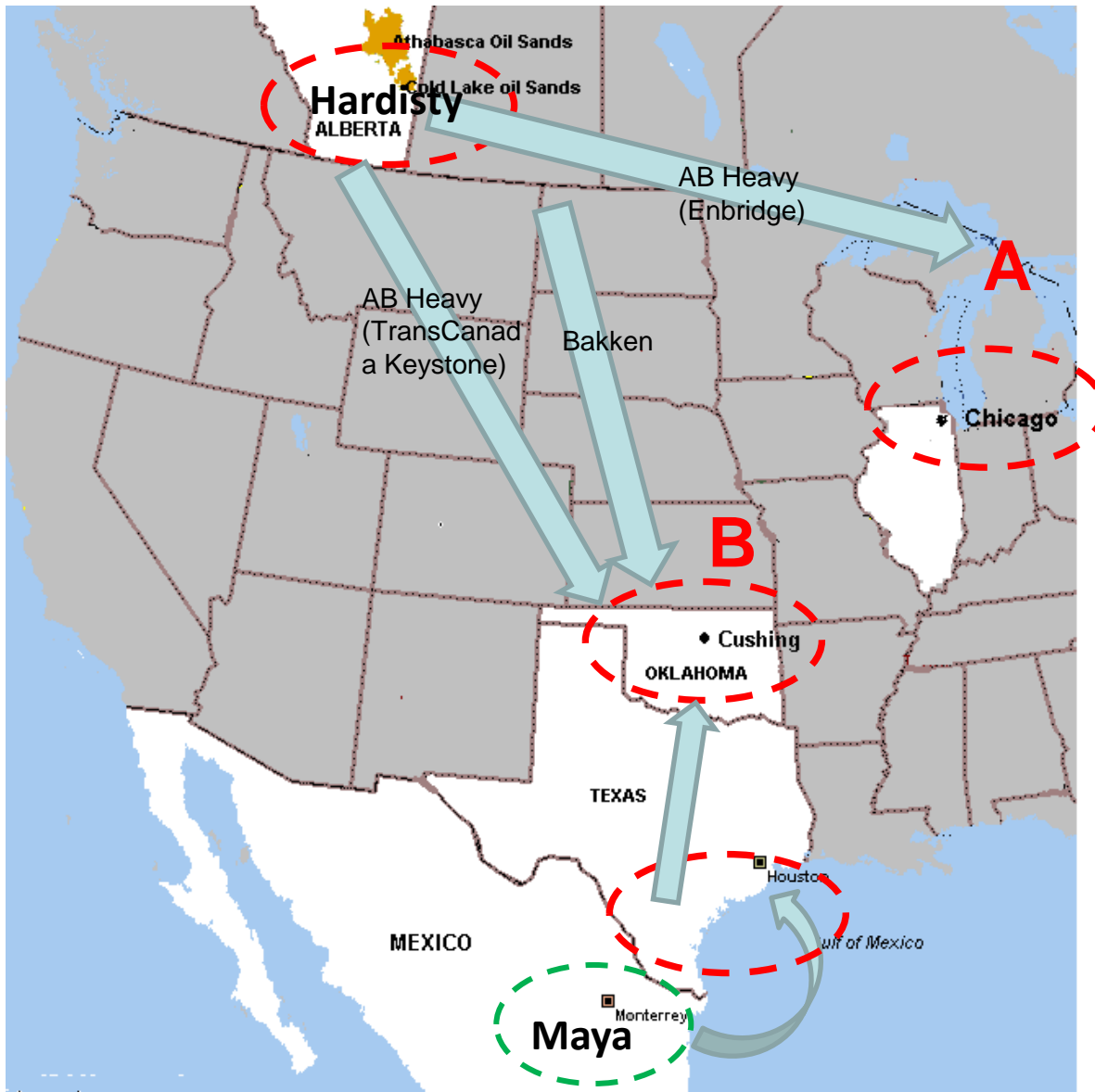
Source: PIRA, Global LNG Monthly (March 2011), ADOE

Western Canadian Crude Oil Demand and Refinery Capacity

Market	Alberta Exports (Barrels Per Day 000's)
PADD 1	59
PADD 2	1,167
PADD 3	78
PADD 4	218
PADD 5	106
Eastern Canada	252
Western Canada	47
Total	1,927



Source: CAPP



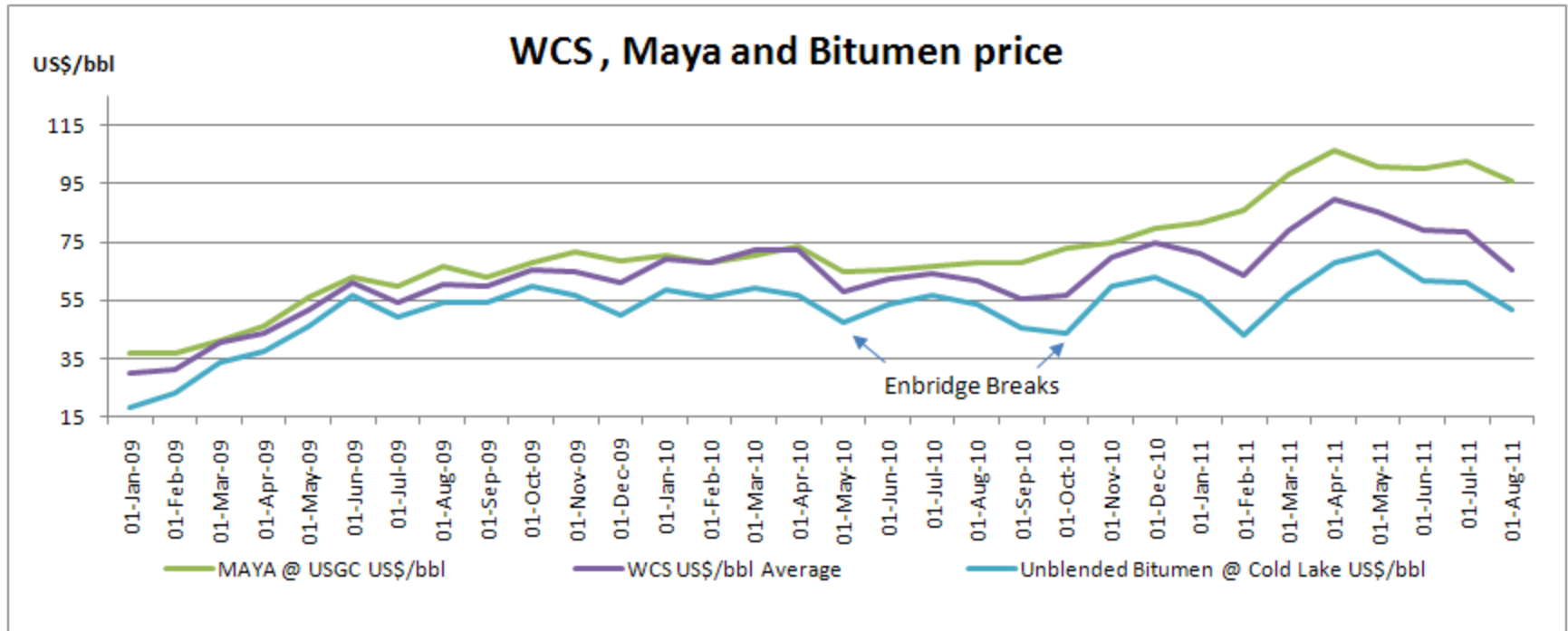
Current Trends:

Heavy crude oil prices appreciated up to 2010 due to increased heavy crude oil refining capacity

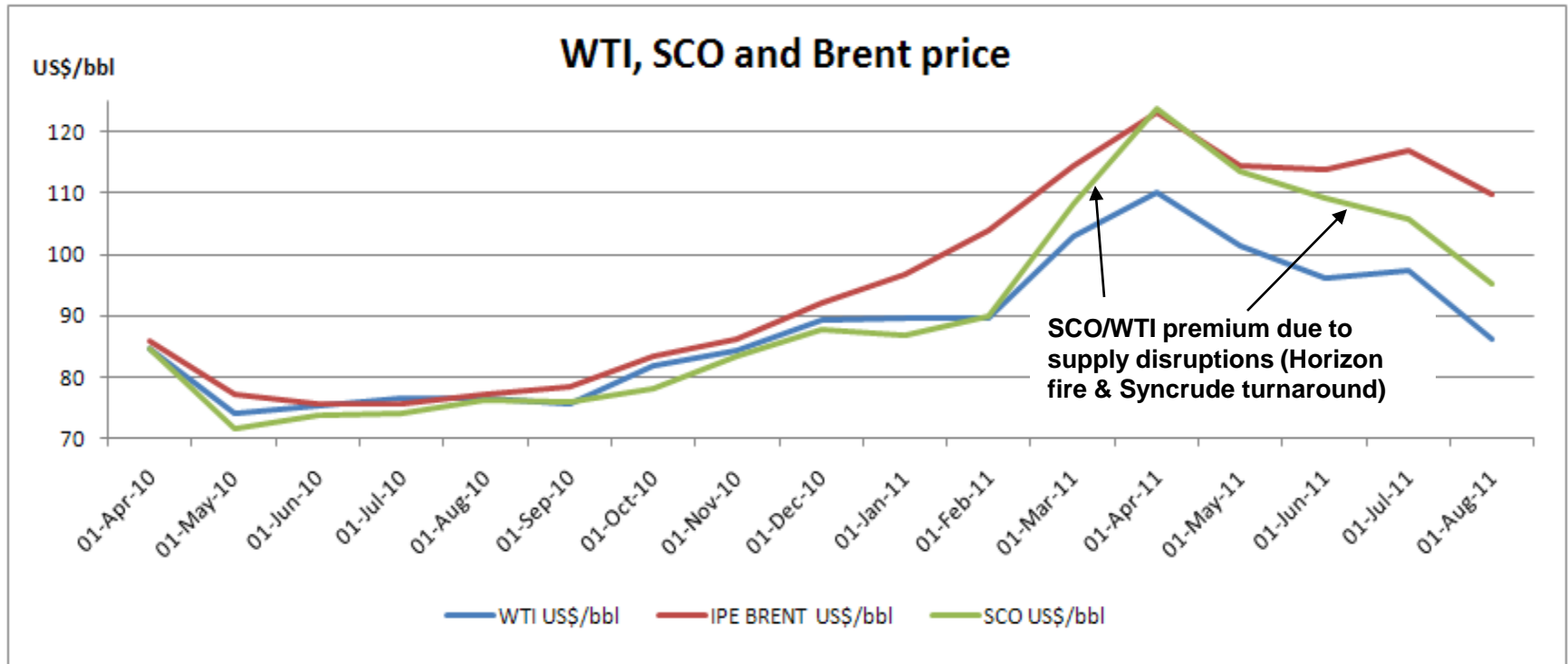
However, falling heavy crude oil prices since late 2010 due to:

- Pipeline ruptures en route to PADD II (“A”) – backlog in Enbridge system
- Increasing supplies from Bakken, heavy crude from Alberta, and crude from PADD III into Cushing (“B”).

North American Heavy & Light Crude Prices Not Keeping Pace with Global Prices

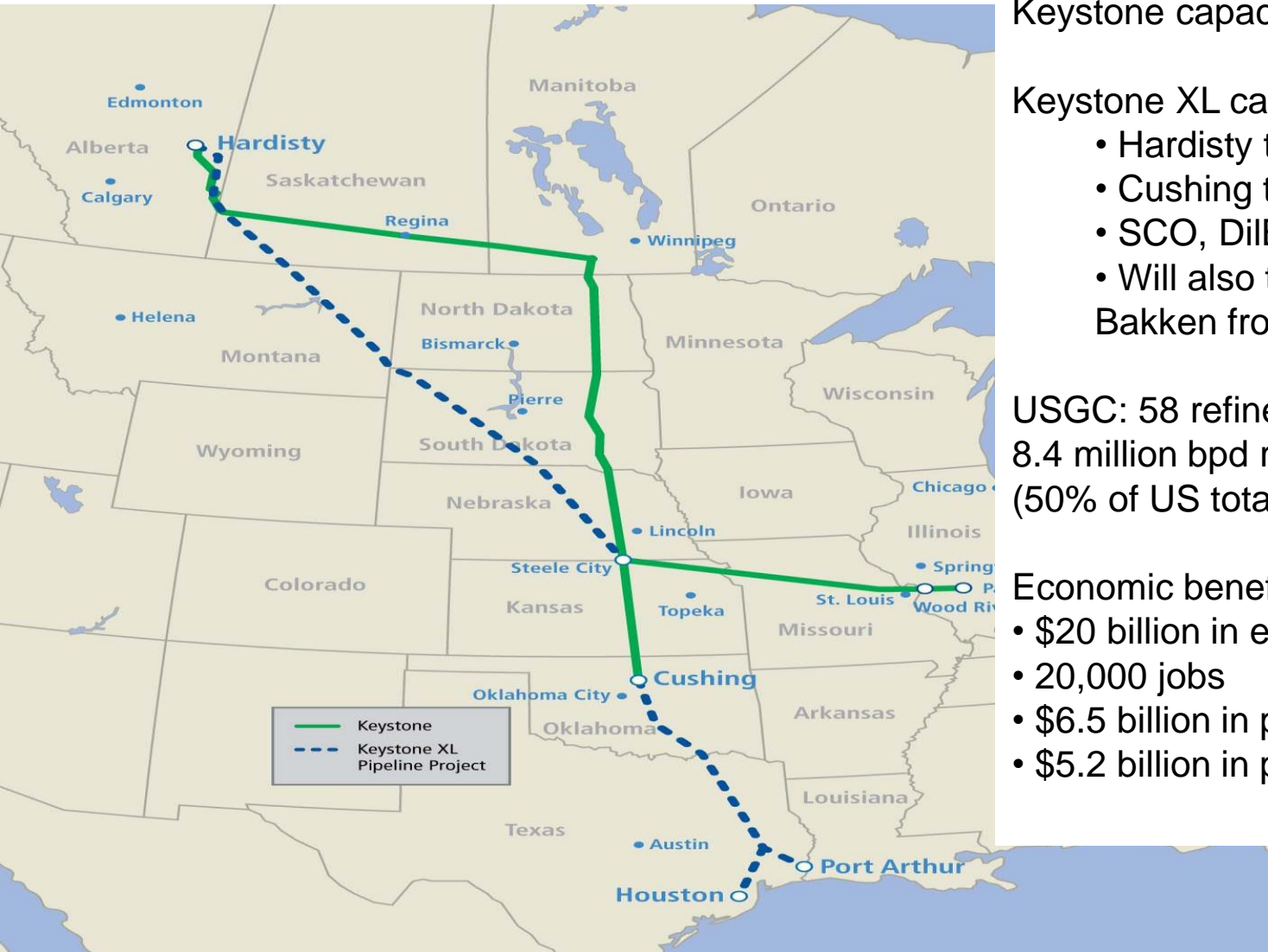


North American Heavy & Light Crude Prices Not Keeping Pace with Global Prices



Access To New Markets: Pipelines and Regulatory

Access to USGC: TransCanada Keystone XL



Keystone capacity: 591k bpd

Keystone XL capacity:

- Hardisty to Cushing: 700k bpd
- Cushing to USGC: 500k bpd
- SCO, DilBit, conventional
- Will also transport 65k bpd of Bakken from Marketlink project

USGC: 58 refineries with 8.4 million bpd refining capacity (50% of US total).

Economic benefits to the US:

- \$20 billion in economic benefit
- 20,000 jobs
- \$6.5 billion in personal income
- \$5.2 billion in property taxes

Access to the West: Enbridge Gateway



Cost: \$5.5 billion (1,177 km twin pipe)

Capacity: 525k bpd

Bruderheim to Kitimat

SCO, SynBit, DilBit, conventional heavy and light

Condensate (193k bpd) back to Alberta

Economic benefits (30 yrs):

- \$270 billion in economic benefit
- 558,000 person-years of employment
- \$81 billion on govt. revenues

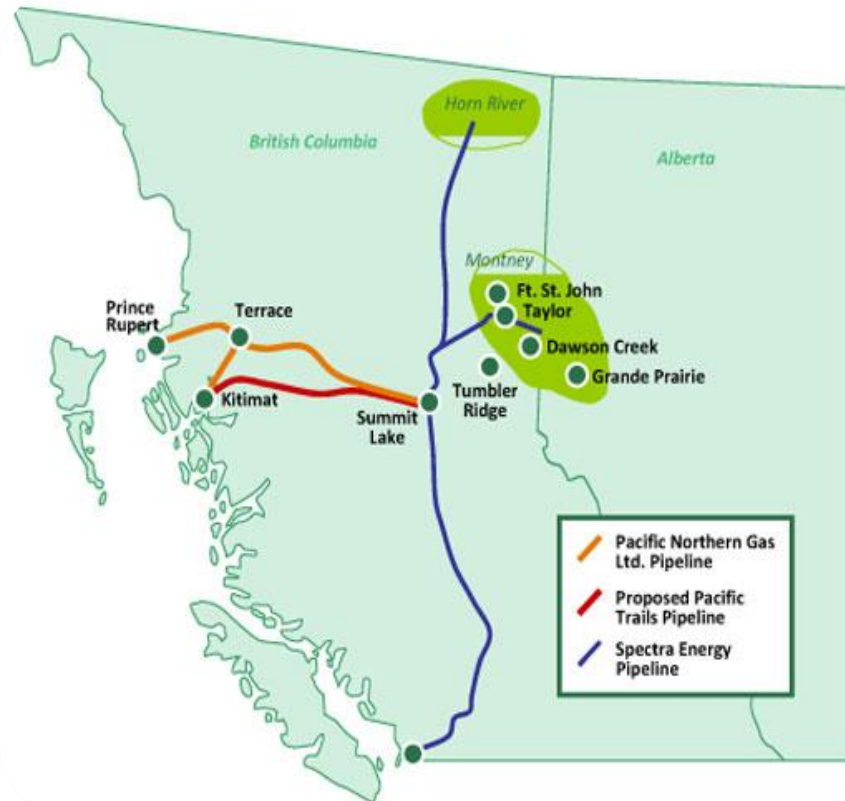
Access to the West: Kinder Morgan TMX



- Capacity: 300k bpd (only pipeline that transports both crude and refined products)
- 80% light, 20% heavy
 - Phase 2 (2013/14):
+ 80,000 b/d
 - Phase 3 (2015/16):
+ 320,000 b/d
 - Northern Leg (after 2016):
+ 400,000 b/d
 - Total 1,100,000 bpd**
- Proposed expansions will transport primarily crude oil, not RPPs.
- Nov 2010: Applied to NEB for approval of Firm Service on the Trans Mountain pipeline system with respect to Westridge marine terminal deliveries.

Natural Gas Access to the West

- Alberta connects into British Columbia via the Spectra Pipeline
- The Pacific Trails Pipeline proposes to connect the Spectra Pipeline with Kitimat through Summit Lake
- The pipeline is expected to be 463 kilometres long with a capacity of up to 1 Bcf/d
- The estimated capital cost of the Pacific Trails project is \$1 billion dollars
- Kitimat will have an initial capacity of 0.7 Bcf/d of liquefied natural gas (LNG) output
- Kitimat awaits a final decision from the NEB but expects its first shipment of LNG in 2015
- BC LNG Export Co-operative LLC is currently the only other company to file for an export LNG licence through the NEB. The hearing will be on March 6, 2012
- BC LNG Export Co-operative LCC will have a capacity of 0.1 Bcf/d



Pacific Trails Pipelines

Improving Investment

The Right Conditions for Investment

Energizing Investment

- Royalty Maximum Reductions
- Royalty Curve Adjustments
- New Well Royalty Rate
- Horizontal Oil New Well Royalty Rate
- Shale Gas Royalty Rate

Enhancing Assurance

- Single regulatory body for oil and gas (ERCB, Environment and SRD)
- New Policy Management Office
- Common risk assessment and management approach
- Clear public engagement
- Establish Performance Measures for effective delivery
- Effective mechanism to address landowner concerns

THANK-YOU