Oil Sands:
Policy Drivers Influencing the "Alberta Advantage"

18 May 2010

Alberta oil sands: key themes

- Sustainability/GHG is the primary story, but far from the only story
- Washington & EU perspectives on oil sands reputation
- Bitumen value-added & Asia markets will test the effectiveness of existing provincial and federal policy mechanisms
- Global competitive environment for oil sands barrels- rising and fading oil rivals

I. Oil Sands: GHG & Sustainability "Messaging"

International Perspectives

Good news/bad news story on technology: tailings vs. CCS

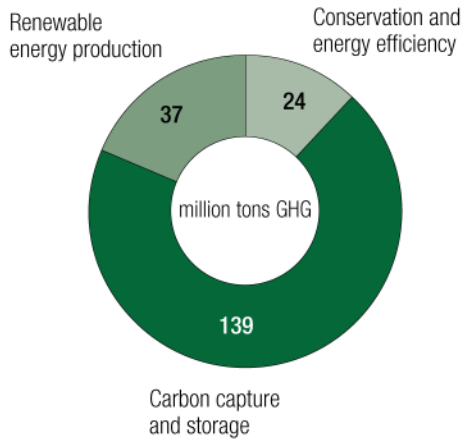
- "Well to wheels" life-cycle emissions focus shifting industry perception at margin
- Policy tensions- industry market-based "gradualism" vs. hard cap & trade approach
- CCS technology option both expensive and ill-suited for most types of oil sands operations
- Tailings pond management (Directive 74) a more immediate concern- dry tailings reclamation (Suncor) expensive but impactful technology
- Investors want information re costs

Canada: Oil sands mining tailings pond growth

	Total tailings pond size- (square kilometers)	Volume of liquid tailings (cubic meters)
2010	130	770 million
2020	250	1.1 billion

Source: Pembina Institute

Alberta's GHG reduction commitments through 2050

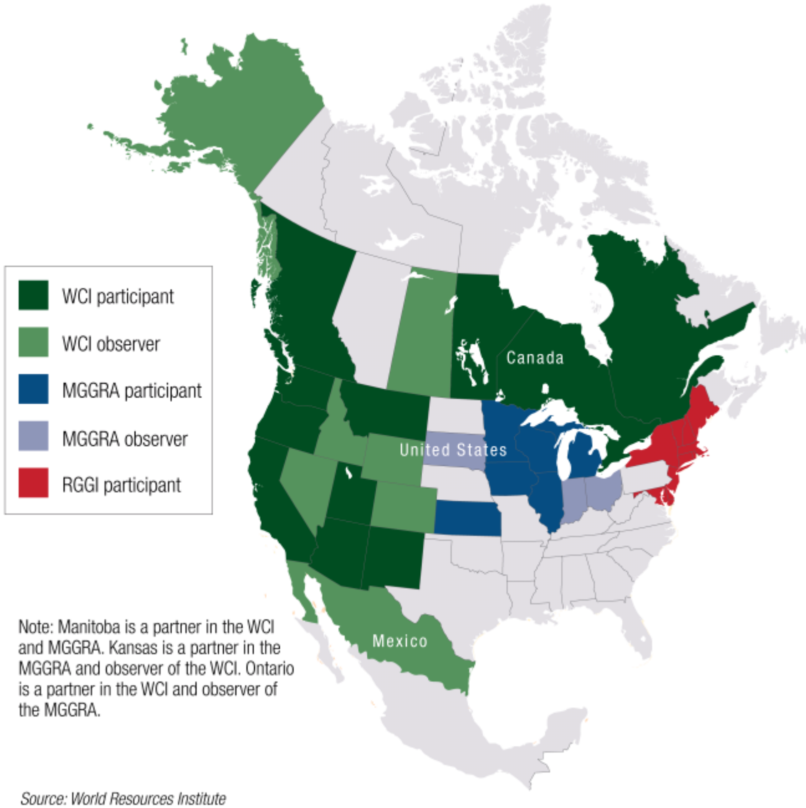


Source: Alberta Environment Ministry

US climate change policy remains stalled; oil sands not a target

- Kerry-Lieberman sector-based carbon pricing approach—carbon tax for transportation; cap-and-trade for power/ manufacturing
- November mid-term elections and no political consensus mean passage unlikely
- Hurdles to EPA regulation of stationary source GHGs
- RGGI and WCI regional carbon markets to proceed
- No federal LCFS or Alberta-focused initiatives
- <u>Don't play up coal & deepwater oil angle</u>

US/Canada regional GHG initiatives

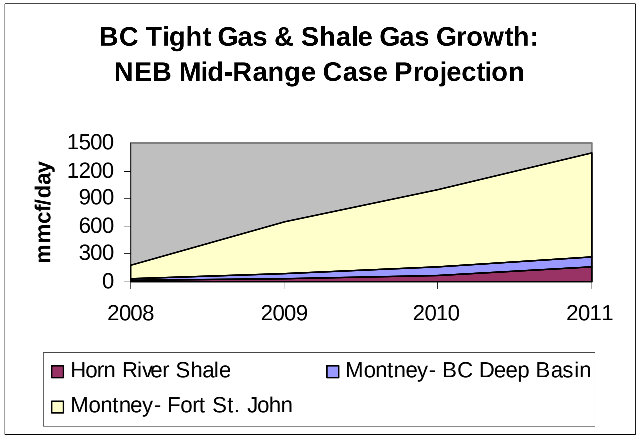


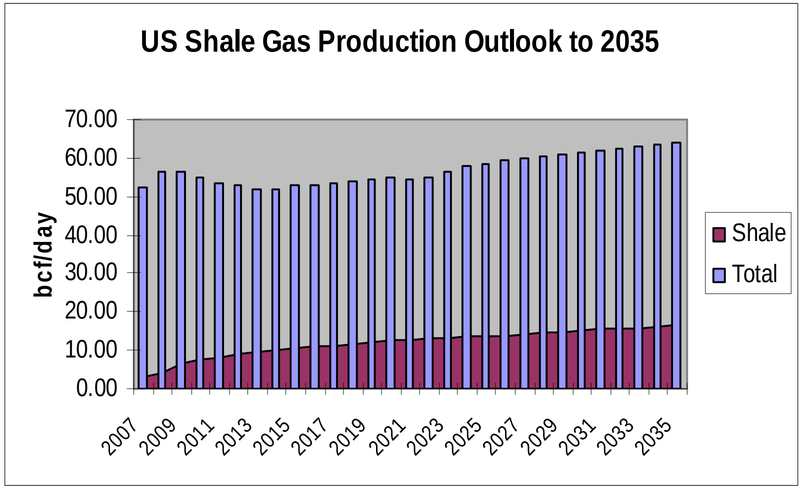
Note: Manitoba is a partner in the WCI and MGGRA. Kansas is a partner in the MGGRA and observer of the WCI. Ontario is a partner in the WCI and observer of the MGGRA.

Source: World Resources Institute

Will shale gas reshape oil sands efficiency push?

- Current oil sands "call" on natural gas = 1 bcf/day will double to 2 bcf/day by 2015 (NEB June 2009)
- High natural gas prices during previous commodity drove innovation technologies: gasification (Nexen), THAI (Petrobank); HTL (Ivanhoe Energy)
- Do lower gas prices shift incentives, particularly with uncertain GHG policy?
- 1.9-3.4 bcf/day of Western Canadian gas demand in Ontario could be displaced by US unconventional from Marcellus/Utica





Source: NEB, EIA

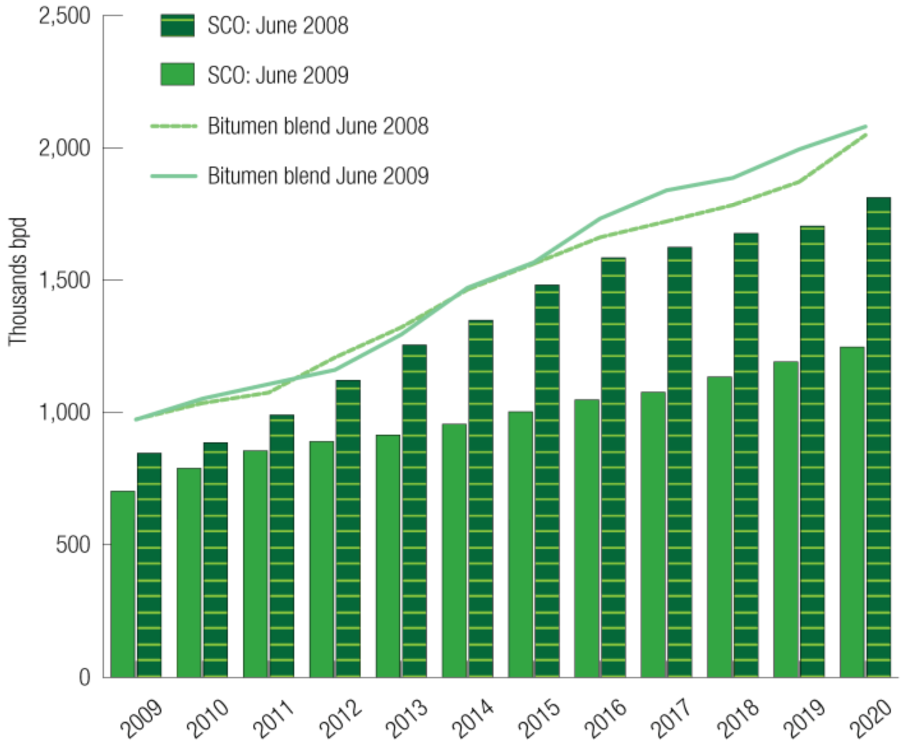
II. Oil Sands: Managing the "Value-Added" Debate

Will there be a bitumen glut?

Value-added: the challenge ahead

- Shift to “bitumen long” strategy not universally embraced in Alberta- government, labor
- Government- impact on royalty if light-heavy spread widens again
- Labor- unhappiness with “exporting jobs”
- Market- too much bitumen going to the same place (PADD II, III)
- US & international factors shape value of bitumen-
- Is there a role for addressing this through public policy?

2008 vs 2009 CAPP oil sands production forecasts

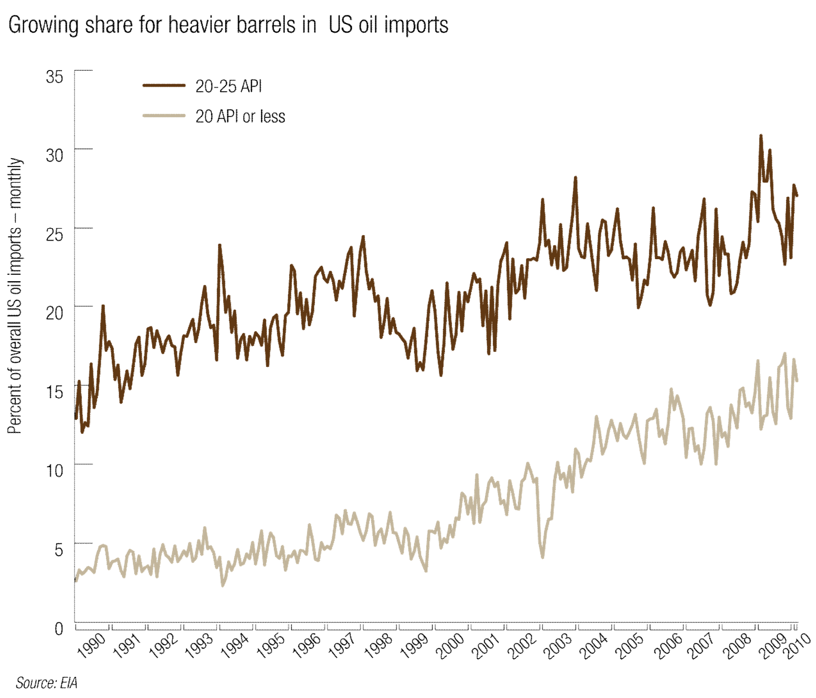


Source: CAPP (Canadian Association of Petroleum Producers)

What is public & industry comfort level with market intervention?

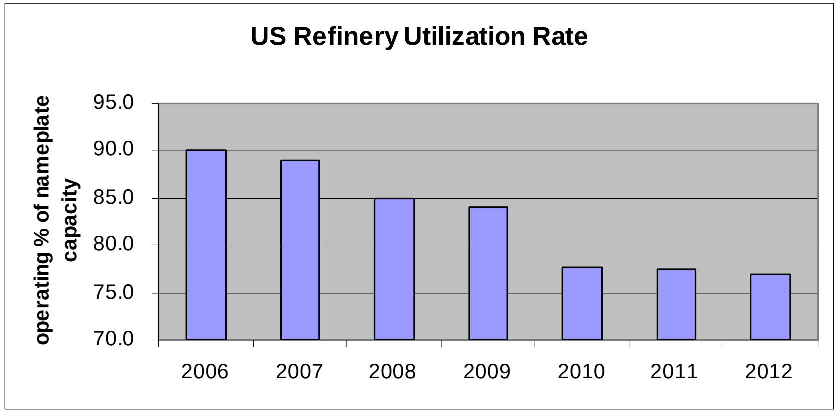
- Legacy of NEP continues
- Previous case of intervention in “Alberta interest” – royalty review; competitiveness review; bitumen/gas reserves policy; ethane exports
- How far should Bitumen Royalty-in-Kind be extended?
- What does government “backstopping” actually mean?
- Impact on existing SCO producers & future upgrader projects?

US Oil Imports Getting Heavier



US refining sector – US cokers displacing Alberta upgraders

- Coking capacity & appetite for heavy barrels growing, but refinery projects face economic uncertainty
- Low refining utilization rate & over-capacity-rationalization period
- What are the merits of the “larger piece of a shrinking pie” for Alberta?
- Role of biofuels, LCFS, efficiency = slow demand growth



Source: EIA

US Gasoline Consumption Reduction Attributed to Ethanol Use

Gasoline Displacement	2007	2008
Thousand barrels/day	357	472
Billion gallons/year	5.5	7.2

III. Oil Sands: Asia-Pacific Markets

Risks & Opportunities for Alberta

Asia markets beckon- but how, when, and how much?

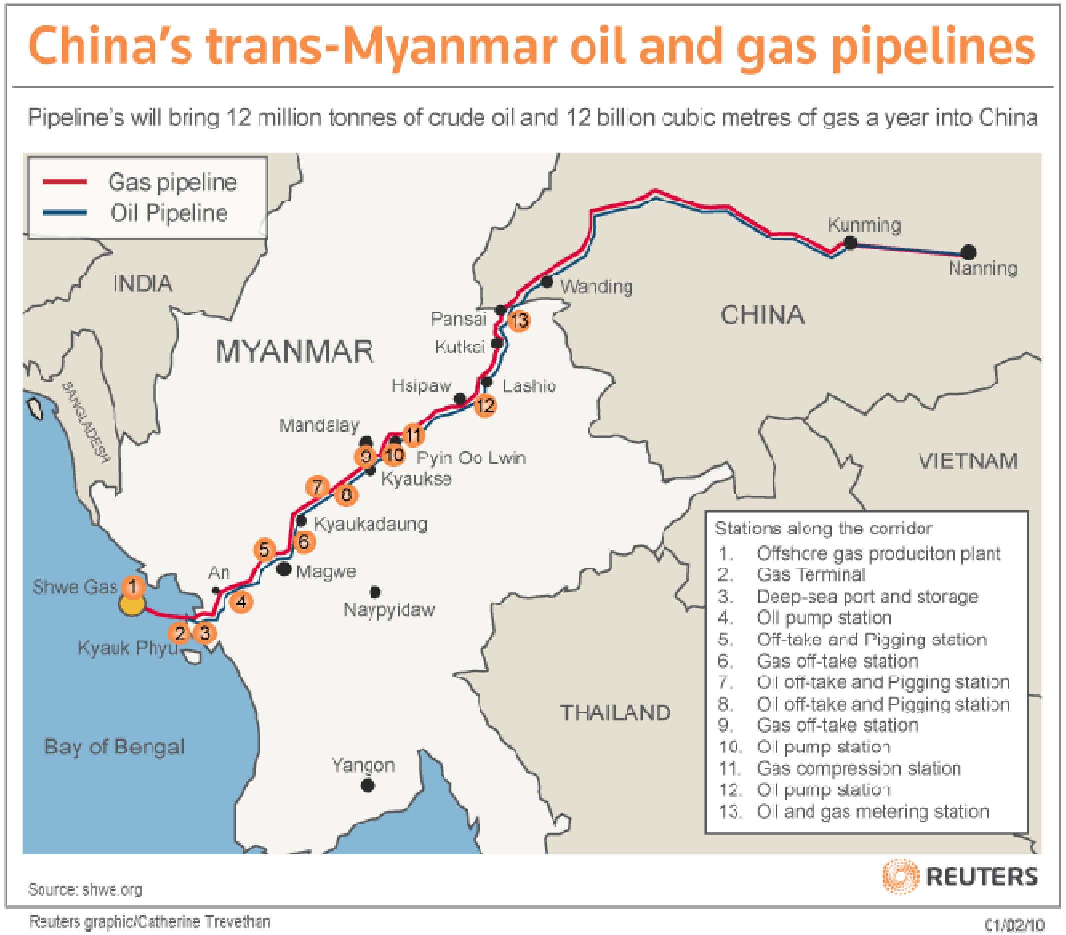
- Tepid industry interest relative to government
- Government lacks policy options for implementation at federal level
- Multiple routes available- each with challenges
- “Leverage” argument re Washington is problematic
- Emerging Asia competing suppliers- Russia/ESPO pipeline

Alberta export pipeline expansion overview

Project	Capacity	Committed volumes	Destination	Startup
Enbridge Alberta Clipper	450,000 bpd (expansion of up to 800,000bpd)	450,000	Superior, WI (connections to Flanagan, IL & Patoka IL)	2010
TransCanada Keystone phase 1	–	–	Wood River/Patoka IL	2010
TransCanada Keystone expansion	–	–	Cushing OK	2011
TransCanada Keystone Gulf Coast expansion	1.1mmbpd(total capacity for all 3 phases of Keystone)	900,000	Bullet line to Steele City, KS; extension to Port Arthur TX	2012 (US regulatory approval pending)
Enbridge Gateway	525,000bpd	0	Kitimat, BC and Pacific markets	2016
Kinder Morgan TMX southern expansion	400,000bpd	0	Burnaby, BC/Anacortes WA and Pacific markets	TBD
Kinder Morgan TMX northern expansion	400,000bpd	0	Kitimat, BC and Pacific markets	TBD

Source: Company data

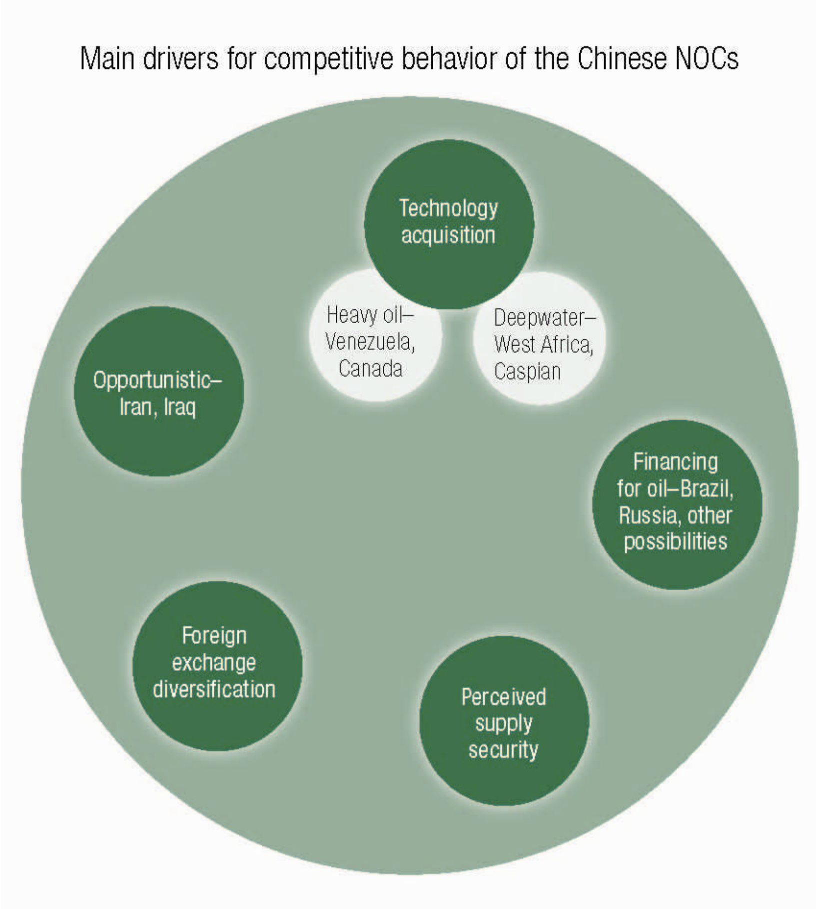
China oil import options expanding- from the south



China oil import options expanding- from the north

China NOCs: Opportunity or Risk for the Oil Sands

- China NOCs have multiple and varied motivations for their investment decisions
- “Equity oil” does not drive all decisions
- Not a significant policy risk in Washington
- Investment Canada action likely to be limited
- “Raw bitumen” export by Harper threat overblown
- Longer-term Chinese interest in direct market links



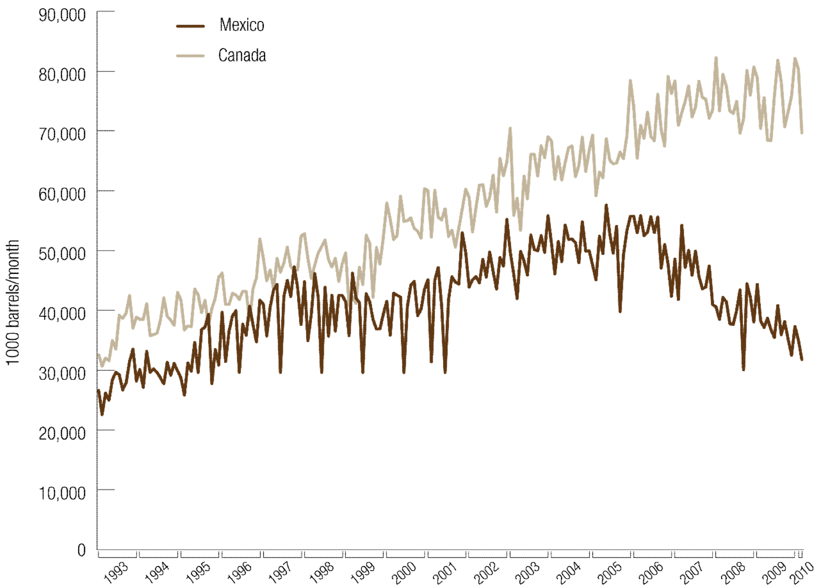
IV: Global Oil Outlook & Geopolitics

Regional & International Competition for Alberta

Western Hemisphere Rivals: Mexico

- Mexican decline rate key driver for oil sands opportunity in PADD II & III
- "A larger piece of a shrinking pie" in US refining sector
- 2012 election will likely result in return of PRI to power- set stage for crisis-driven energy reform
- Meaningful post-reform increase in Mexican oil production would be driven by EOR and deepwater
- Role of US IOCs will be politically-contentious
- Likely to be an extended "window" for Alberta to capture market share

US monthly oil imports: Canada vs. Mexico



Source: EIA

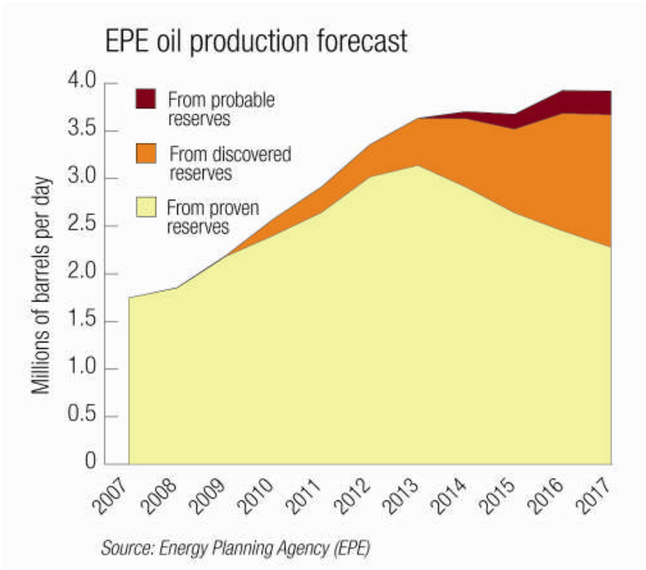
Western Hemisphere Rivals:
Venezuela- Down & Out But For How Long?

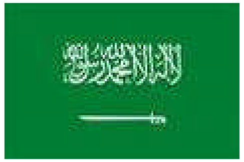
- Chavez has retained NOC & IOC interest in the Faja- but is it simply “option value”?
- USGS/Project Magna reserves certification push
- Carobobo/Junin represent 880,000bpd potential in initial phases
- PDVSA expansion plans face multiple hurdles- final royalty structure; ability of PDVSA to lead projects; availability of gas/power
- 2012 election will be Chavez focus- dependent on stable oil & food prices
- Change of government not necessarily an immediate win for the oil sector- power vacuum

Project	Foreign Investors	Expected 2016 Volumes
Carobobo 1	Repsol, ONGC, Petronas	480,000
Carobobo 3	Chevron, Mitsubishi, Inpex	400,000
Junin	Eni, CNPC, Lukoil, others	??

Western Hemisphere Rivals: Brazil

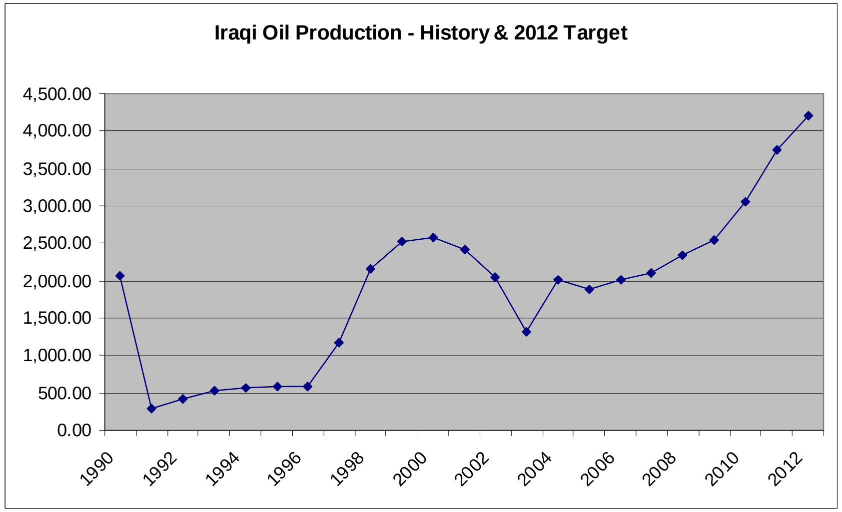
- 2010 Presidential elections shaping pre-salt & hydrocarbon reform outlook
- Industrial policy goals driving downstream & oil services approach
- Non-pre salt fields drive production growth through 2013; possible delays to production ramp thereafter
- Primarily light barrels will impact light-heavy spread and sustain “bitumen long” strategy in Alberta post-2015
- IOC unhappiness with Petrobras exclusivity as lead operator & PetroSal veto power on investments/control of operating committee bolsters attractiveness of Alberta





Other Global Trends: Iraq, Saudi Arabia

- Arab Heavy barrels flowing into Asian market to access new refining capacity
- Expected volumetric increases of Iraqi light over next decade- supportive of "bitumen long"
- Saudi Manifa project will add heavy volumes
- Geopolitics: emerging Iraq/Iran/Saudi/OPEC dynamic key to global oil



Source: Iraqi Oil Ministry

KEY CONCLUSIONS

- Alberta is gaining significant momentum on sustainability messaging through pro-active, science-based approach
- Key next steps on GHG/tailings are federal-provincial alignment & more detail on costs (!)
- The bitumen value-added debate pits the free market dependent policy approach against a more interventionist model- watch for rising intervention
- The “bitumen long” strategy is exposed to international risk- Alberta impacted by decisions abroad in rival producers
- The real risk in US is weak demand, not the “dirty oil” green lobby
- Chinese markets & investments represent opportunity, not risk
- Ottawa’s role remains elusive- Albertans should consider the upside as well as the downside of a more active federal role

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