

Introduction

 Centre for Energy	
Mission <ul style="list-style-type: none">▪ To be the primary source of information, statistics and educational materials pertaining to Canada's energy sector▪ All about energy, all in one place www.centreforenergy.com	Mission <ul style="list-style-type: none">▪ To help clients make effective energy-industry strategic decisions▪ Focus on Canada's oil sands industry www.strategywest.com

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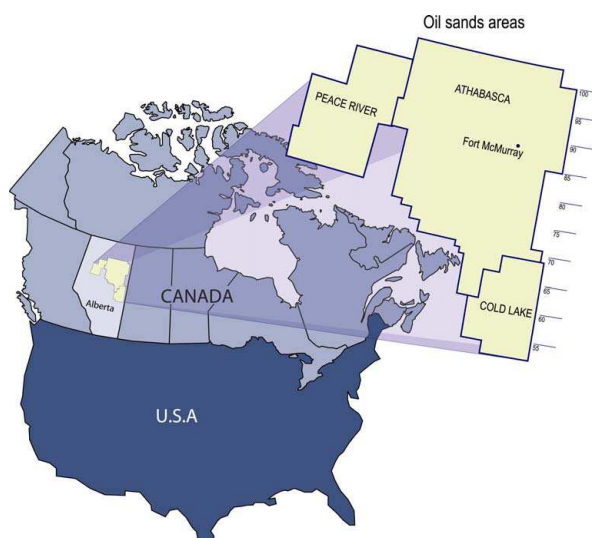
Presentation Topics

- Canada's Oil Sands Industry Today
 - Resources, reserves and production
 - Recovery technologies
 - Economics
- Oil Sands Industry Outlook
- Industry Challenges
- Implications for the US and Alaska

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Canada's Oil Sands




- Initial volume in place (bitumen): $1,629 \times 10^9$ barrels
- Initial established reserves: 178×10^9 barrels
- Cumulative production: 4×10^9 barrels
- Remaining established reserves: 174×10^9 barrels

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Source: EUB Alberta's Reserves 2003 and Supply/Demand Outlook 2004-2013

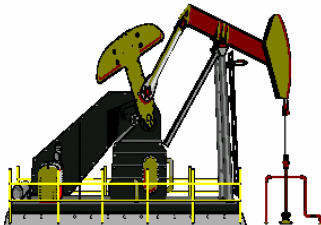
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Resources and Reserves



Mineable Resources/Reserves

- < 250 ft depth to top of oil sands formation
- Athabasca only
- 7% of OBIP; 20% of initial established reserves; 70% of cumulative production



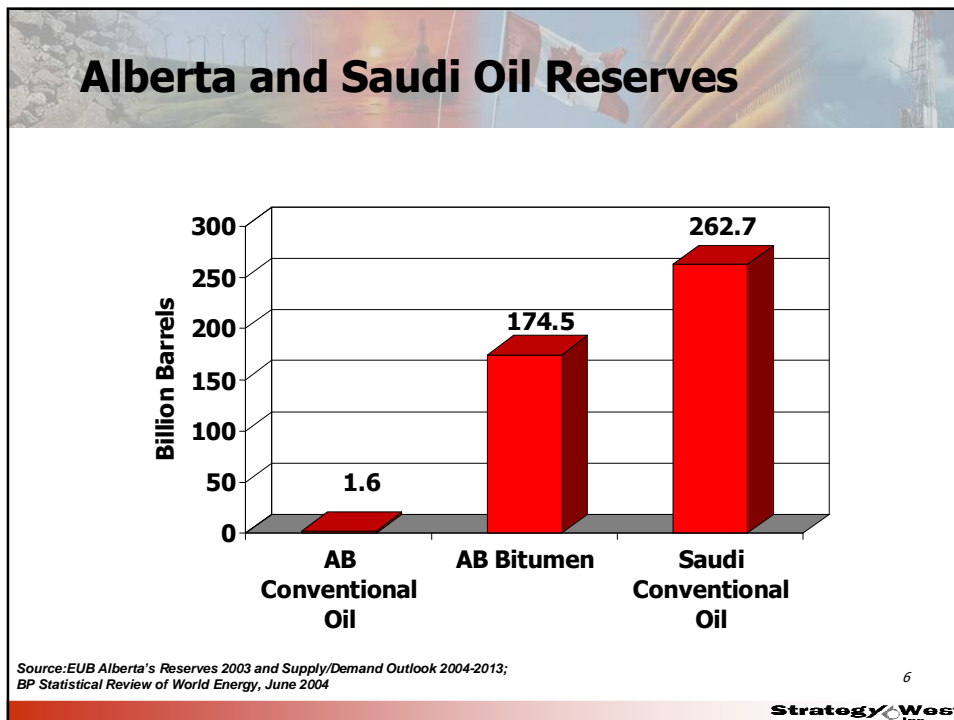
In Situ Resources/Reserves

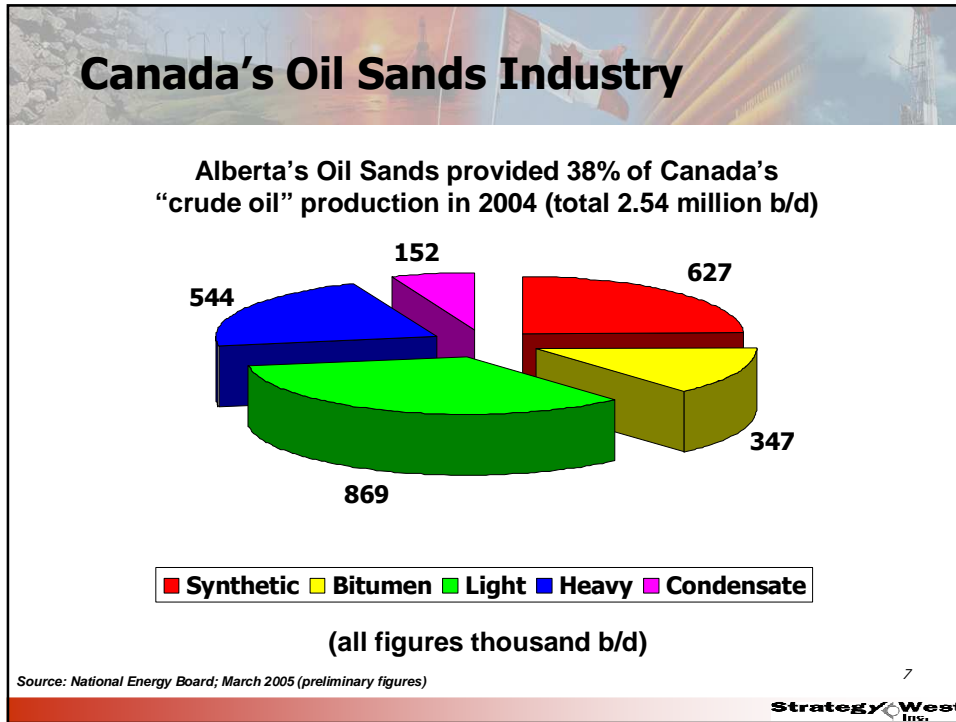
- > 250 ft depth to top of oil sands formation
- Athabasca, CL and PR
- 93% of OBIP; 80% of initial established reserves; 30% of cumulative production

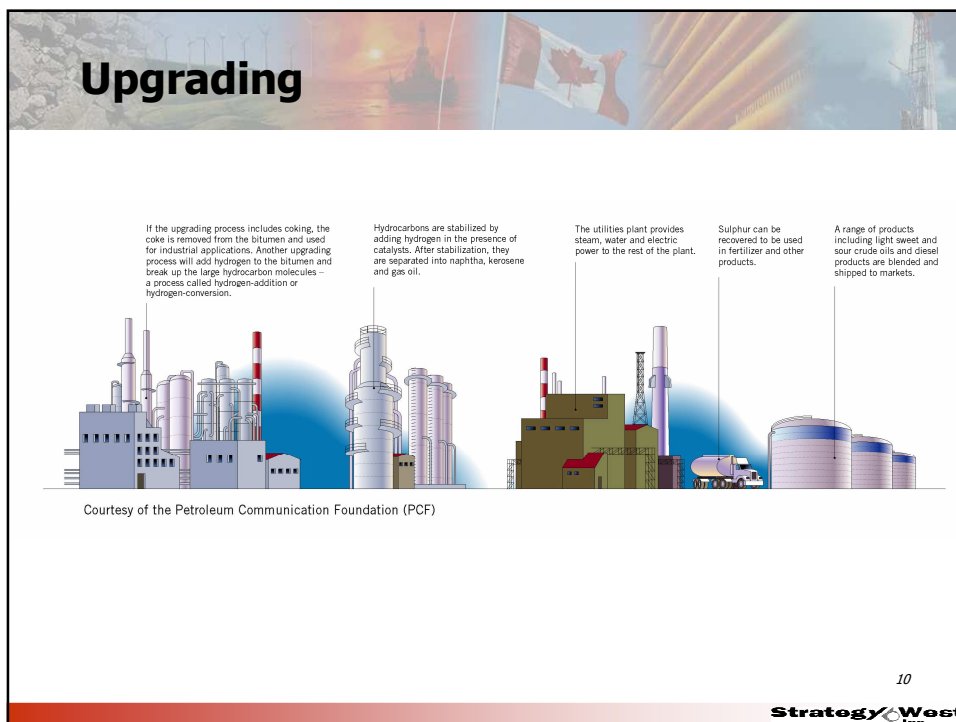
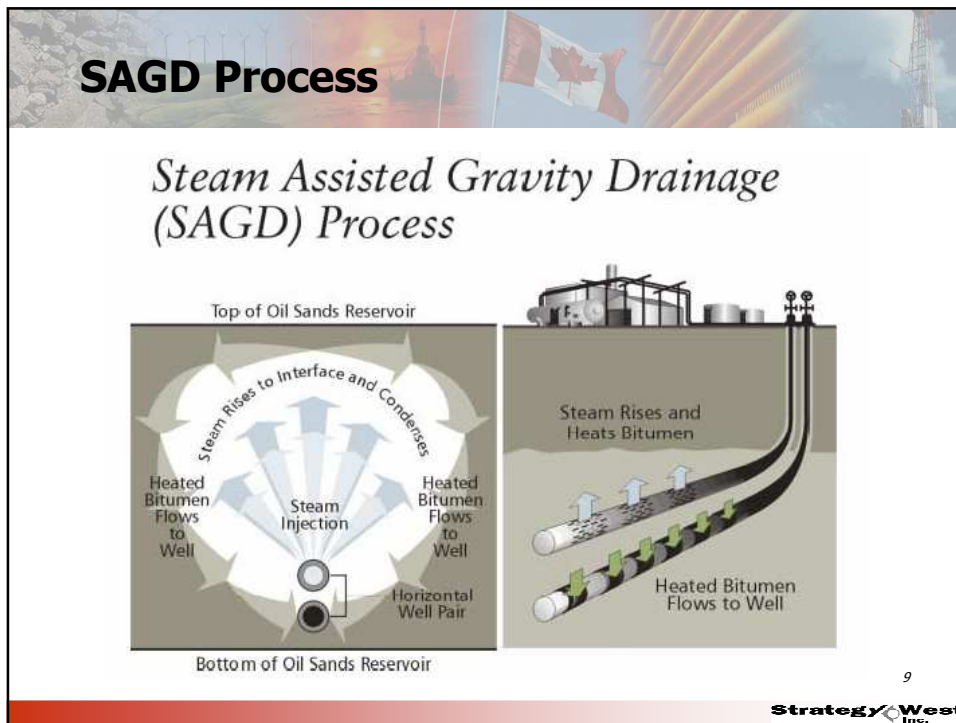
Source: EUB Alberta's Reserves 2003 and Supply/Demand Outlook 2004-2013

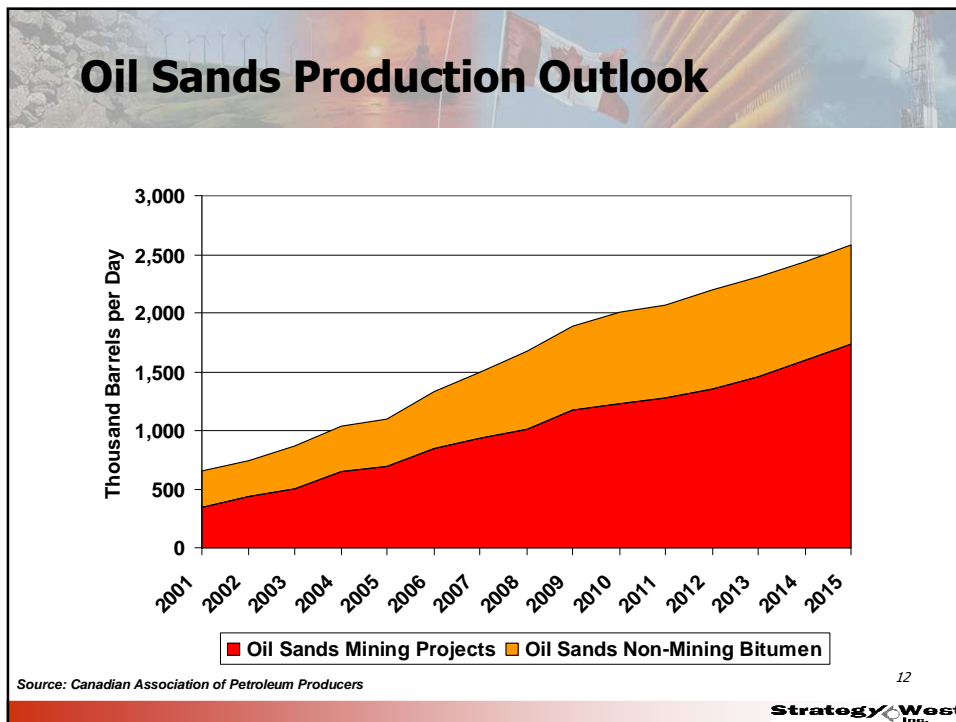
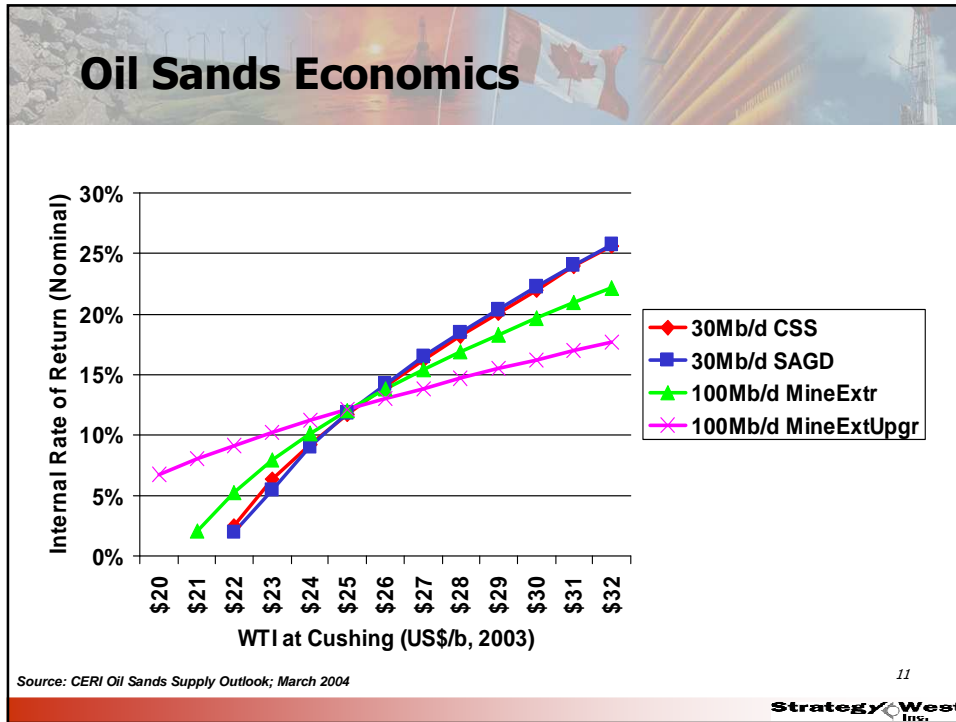
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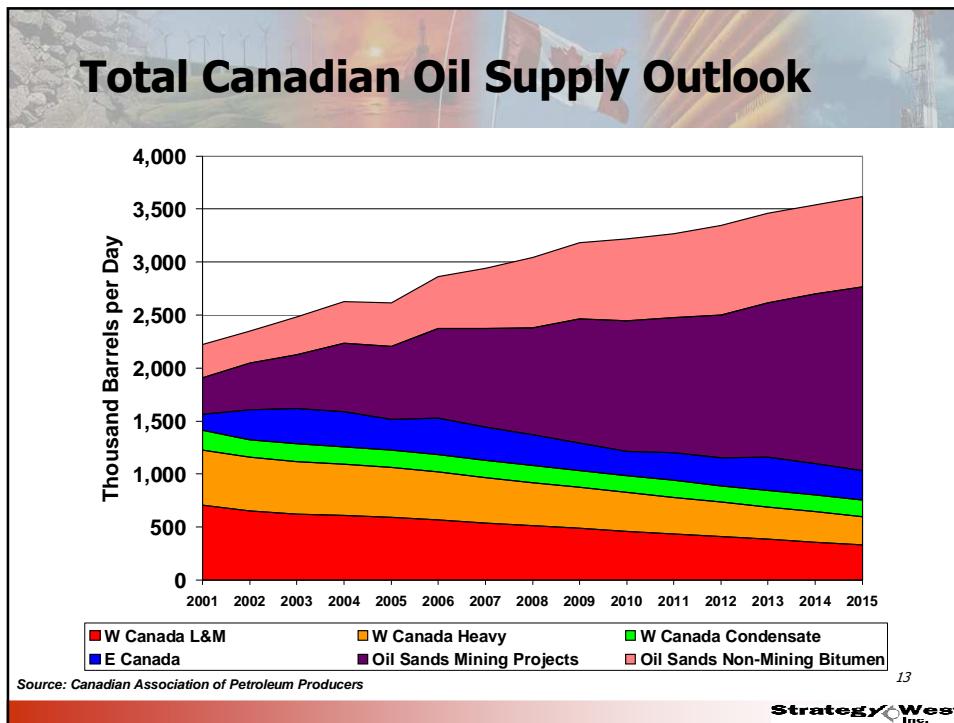
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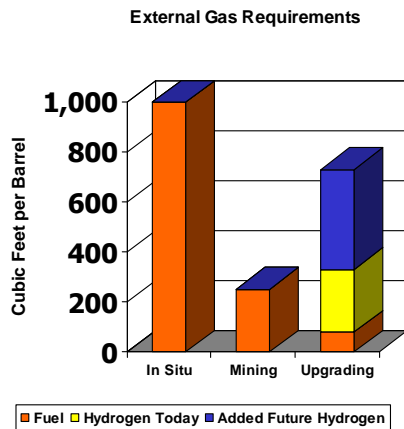






- ### Challenges
- Pace of Development
 - Socio-economic impact on communities
 - Skilled labour requirements
 - Integrated land management
 - Energy consumption and costs
 - Mega-Project Cost Overruns
 - Infrastructure and Market Access
 - Environmental Considerations
 - Greenhouse gas emissions
 - Water use
 - Land management
 - Reclamation
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Oil Sands External Natural Gas Requirements



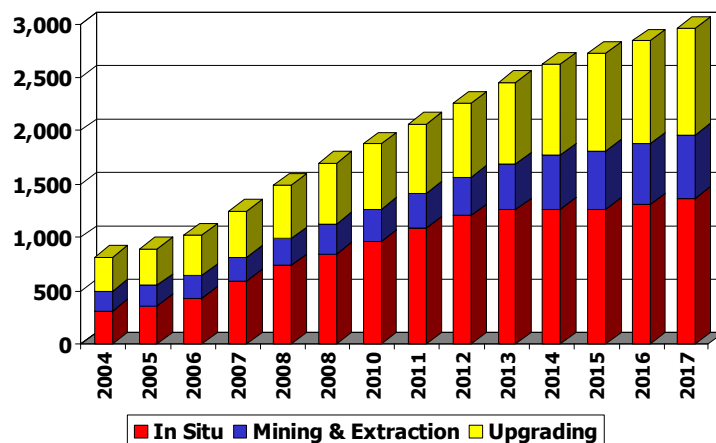
- Thermal in situ projects are very large energy consumers – Gas use depends on recovery performance
- Gas use for upgrading is higher for production of higher quality synthetic crude oil

Source: Oil Sands Technology Roadmap

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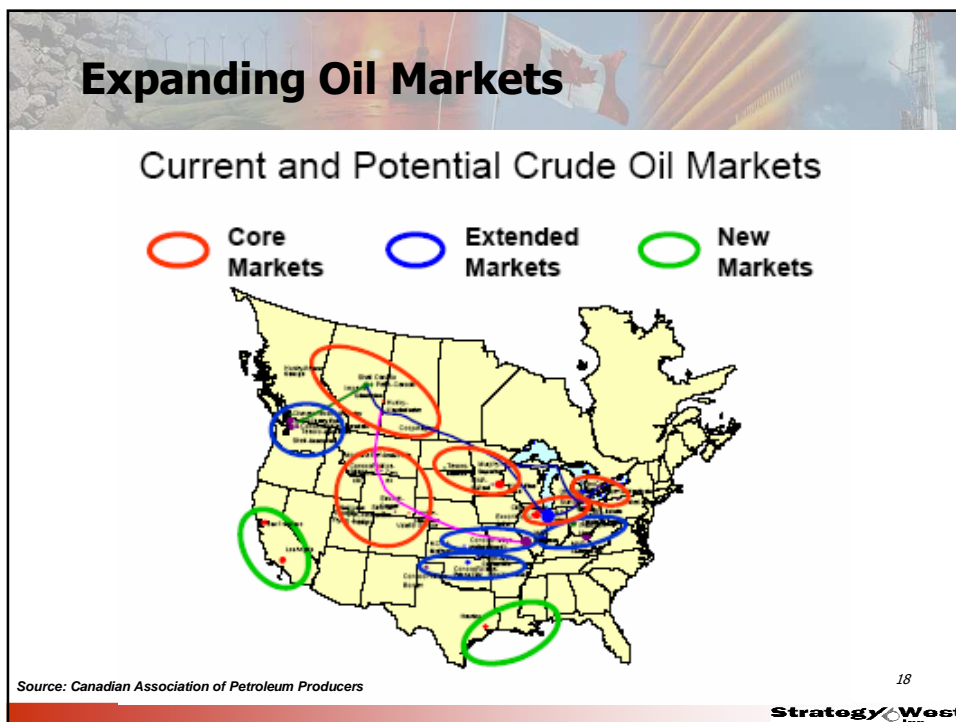
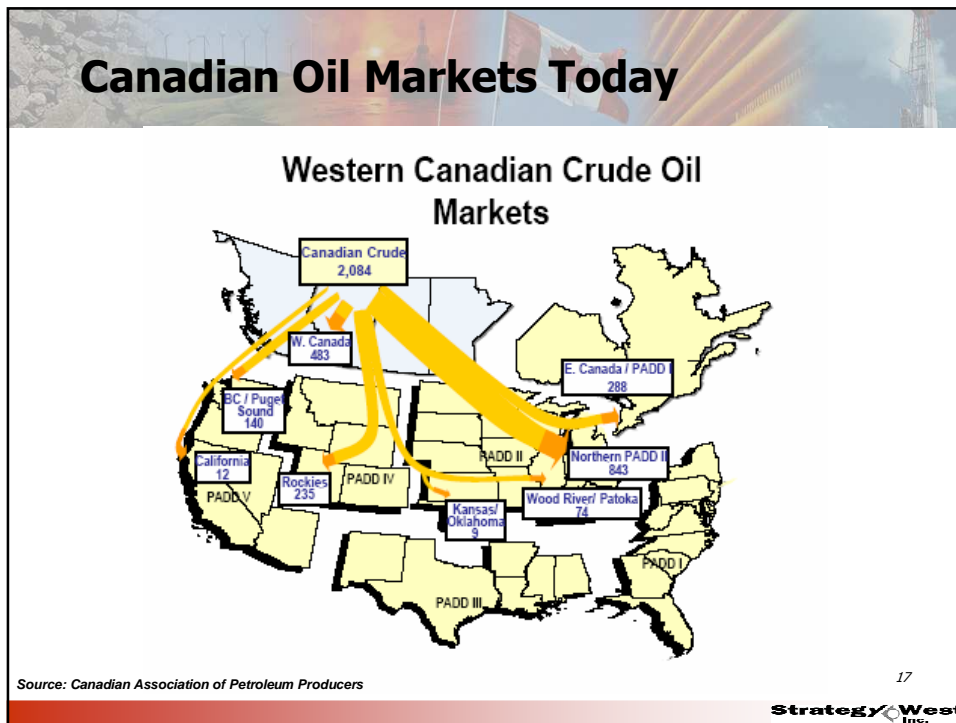
Unconstrained Natural Gas Demand (million cf/d)

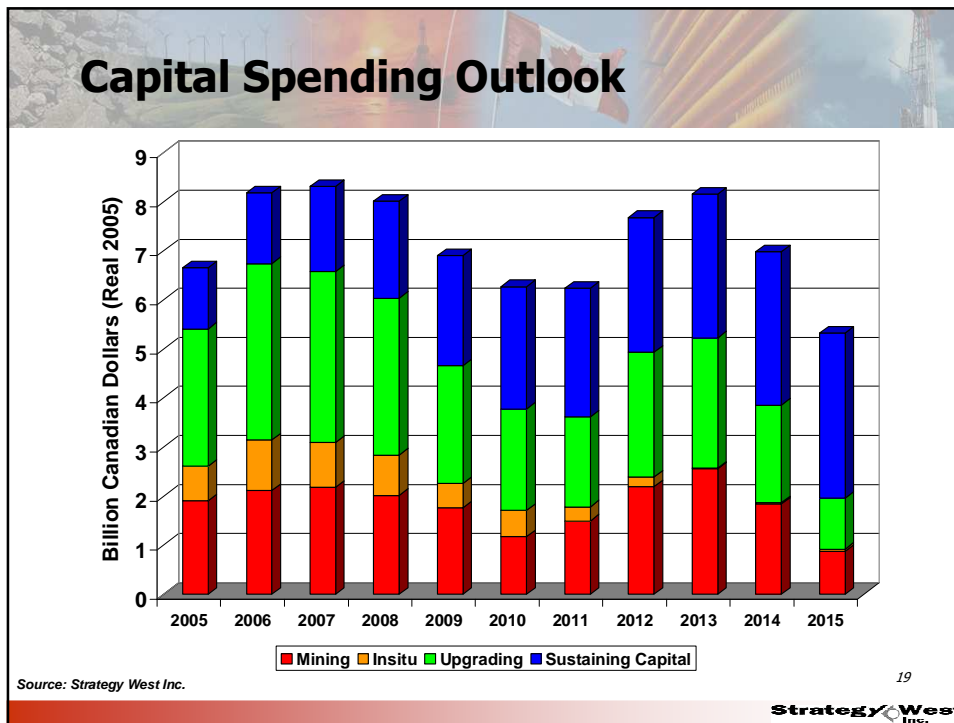


Source: Strategy West Inc.

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- ### Implications for the US and Alaska
- Secure North American Oil Supply
 - Increased shipments to existing US markets
 - Access to additional US markets
 - California
 - USGC
 - Large Gas Consumer
 - Alaska North Slope, Mackenzie Delta and Beaufort gas
 - Continued tight North American gas market
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Conclusions

- Canada's oil sands rank with the world's largest hydrocarbon deposits
- Canada is the world's only developed country with expectations of future oil production growth
- Canada's oil sands will make an increasingly important contribution to North America's oil supply

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