

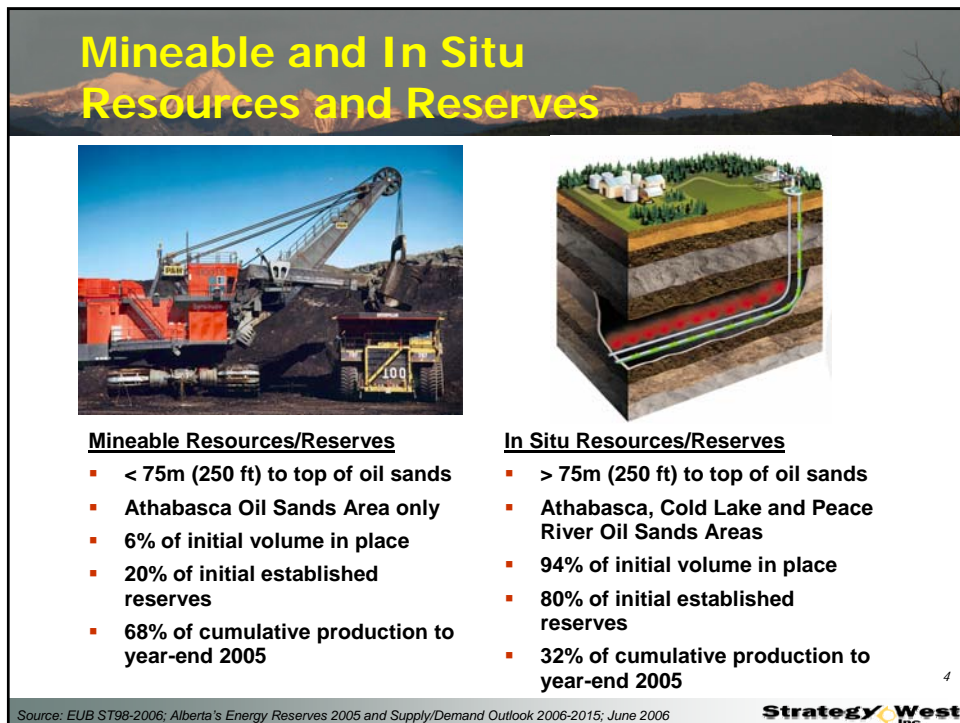
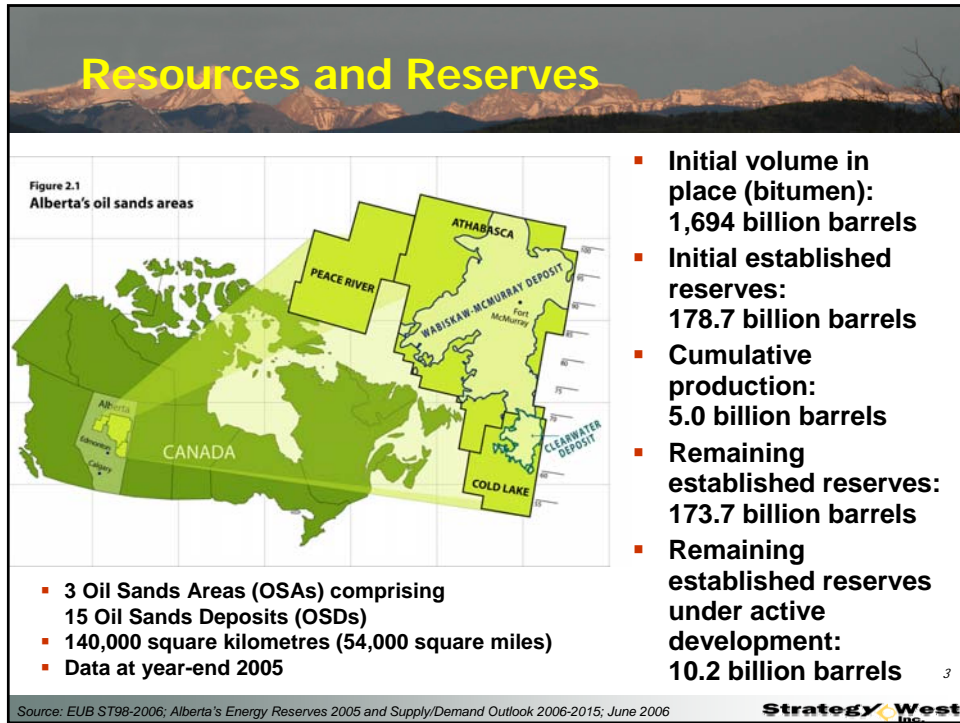


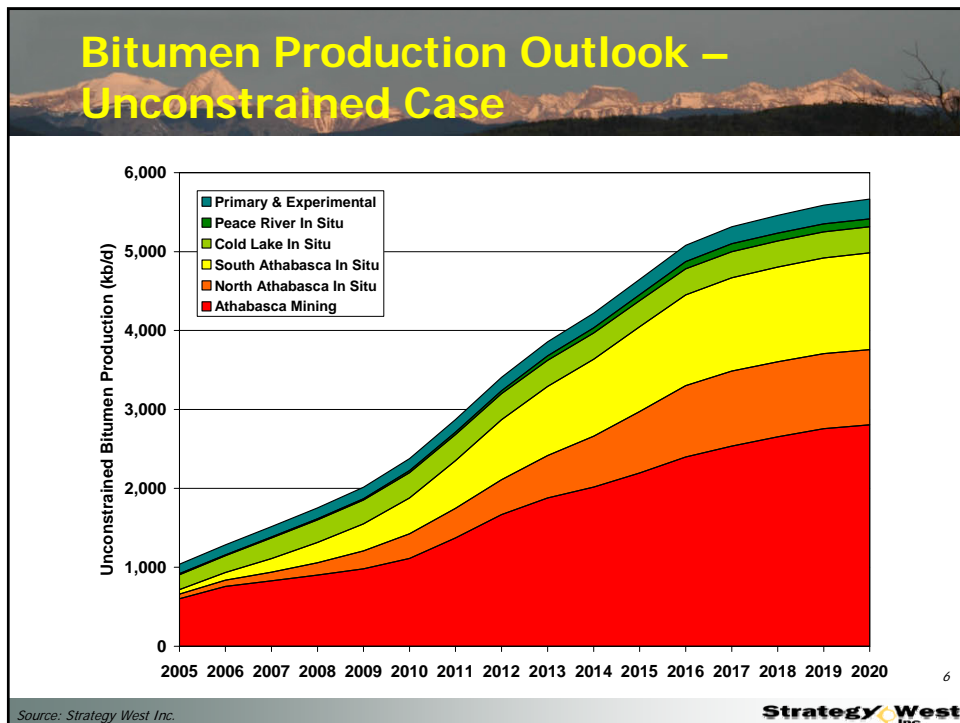
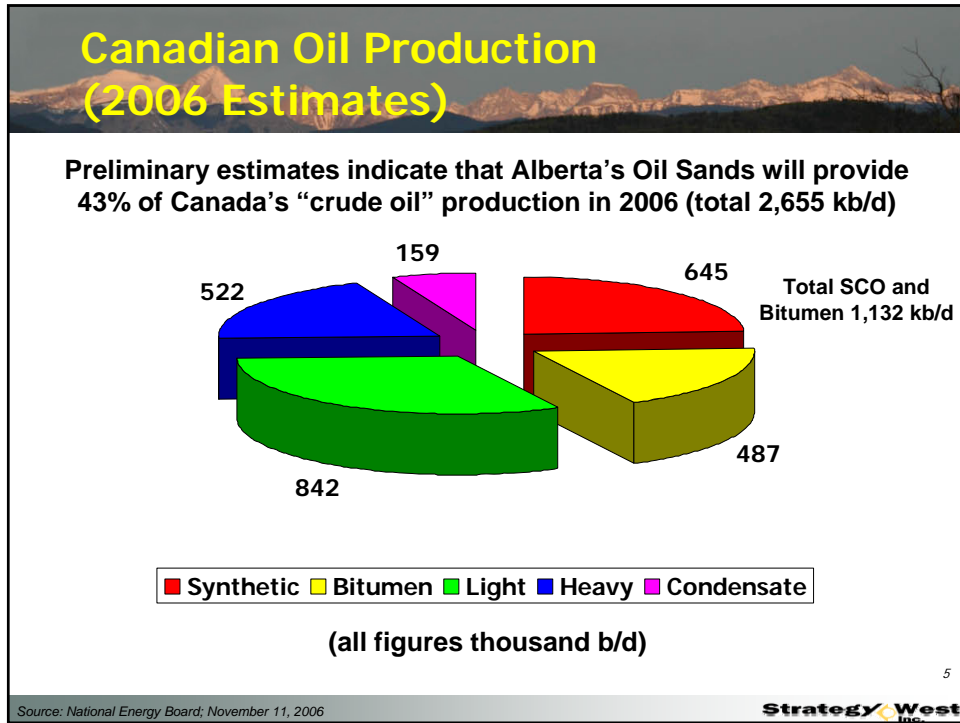
Presentation Outline

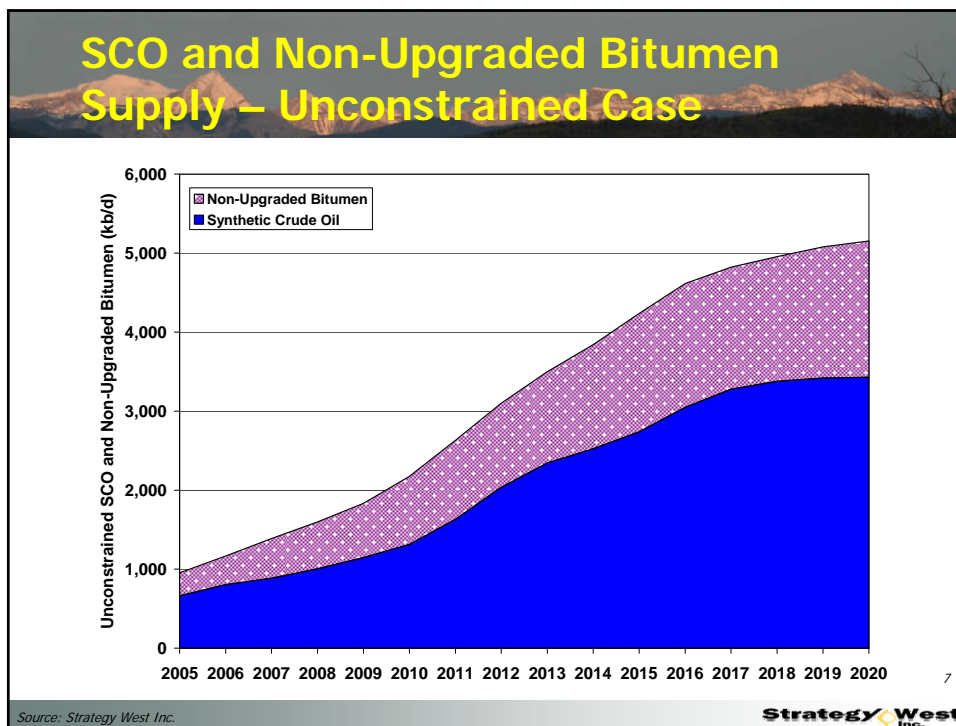
- Oil Sands Industry Resources, Reserves and Historical Production
- Industry Outlook - Unconstrained Case
 - Crude bitumen production
 - Synthetic crude oil and non-upgraded crude bitumen supply
- Industry Challenges
 - Greenhouse gas emissions
 - Energy supply and costs
 - Project costs and economics
- Industry Outlook – Constrained Case
- Conclusions

2

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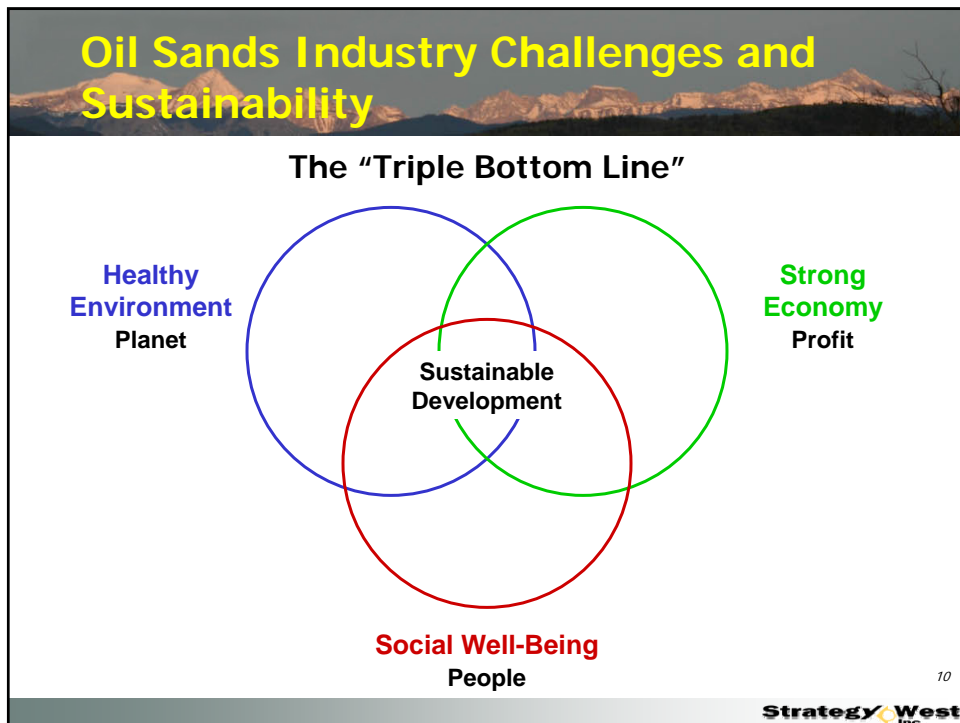
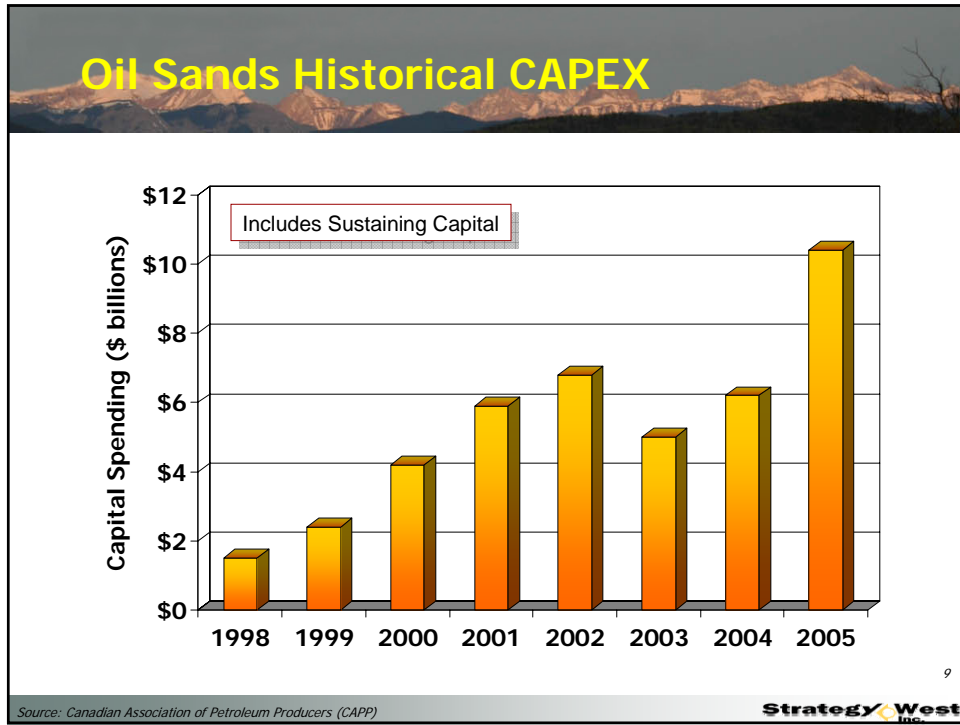


CAPEX – Unconstrained Case

| | Incremental Bitumen 2005-2020 (million b/d) | Initial CAPEX (\$ per b/d) | Average Annual Initial CAPEX 2005-2020 (\$ billions) |
|-------------------------------|---|----------------------------|--|
| Mining & Extraction | 2.2 | \$35,000 (Bitumen) | \$5.2 |
| In Situ | 2.4 | \$25,000 (Bitumen) | \$3.9 |
| Incremental Production | 4.6 | | \$9.1 |
| Upgrading | 2.8 | \$50,000 (SCO) | \$9.2 |
| Total CAPEX | | | \$18.3 |

Note: does not include sustaining capital 8

Source: Strategy West Inc. Strategy West Inc.



Oil Sands Industry Environmental Challenges

- Air Emissions
 - Greenhouse Gases
 - Criteria Air Contaminants (SO_x, NO_x, PM, VOCs, CO, NH₃)
- Water Use
 - Consumption
 - Recycle
- Waste Disposal
 - Tailings
 - Other Solid and Liquid Wastes
- Reclamation and Abandonment
- Cumulative Effects

11

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Oil Sands Industry Economic Challenges

- Capital Costs
 - Labour Availability and Productivity
 - Services and Materials
 - Project Management
- Energy Consumption, Supply and Costs
 - Internal Energy Use
 - External Energy Options
- Non-Energy Operating Costs
- Product Prices
 - Light Sweet Crude (WTI/MSW)
 - Heavy-Light Differentials
- Markets
 - Final Product (Bitumen, SCO, RPPs or Petrochemicals)?
 - Integration?
- Market Access
 - Pipeline Infrastructure
- Gas-over-Bitumen

12

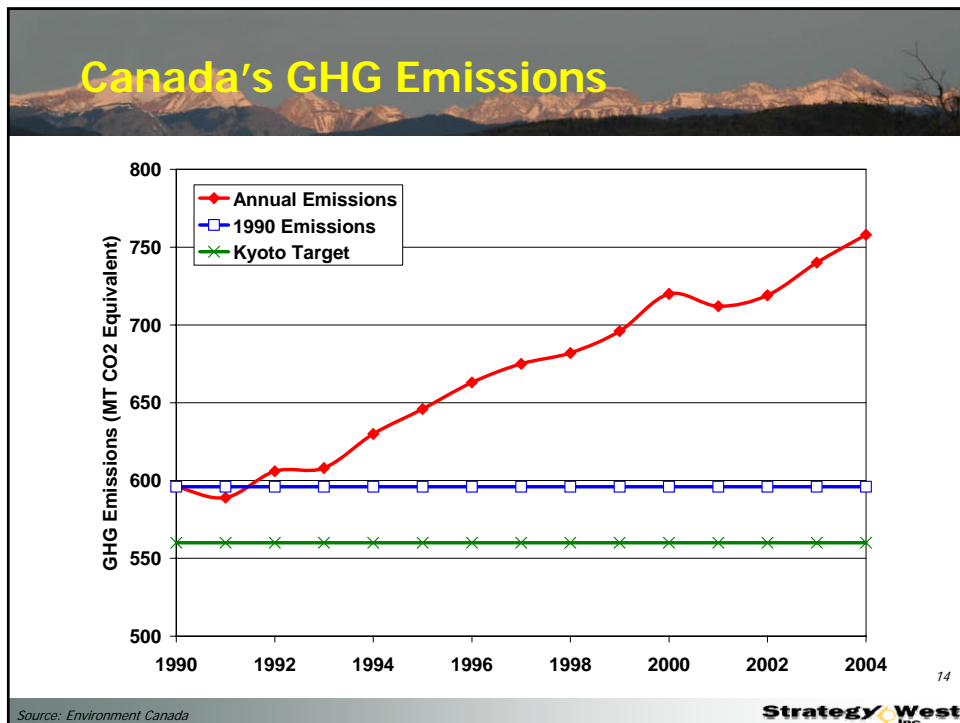
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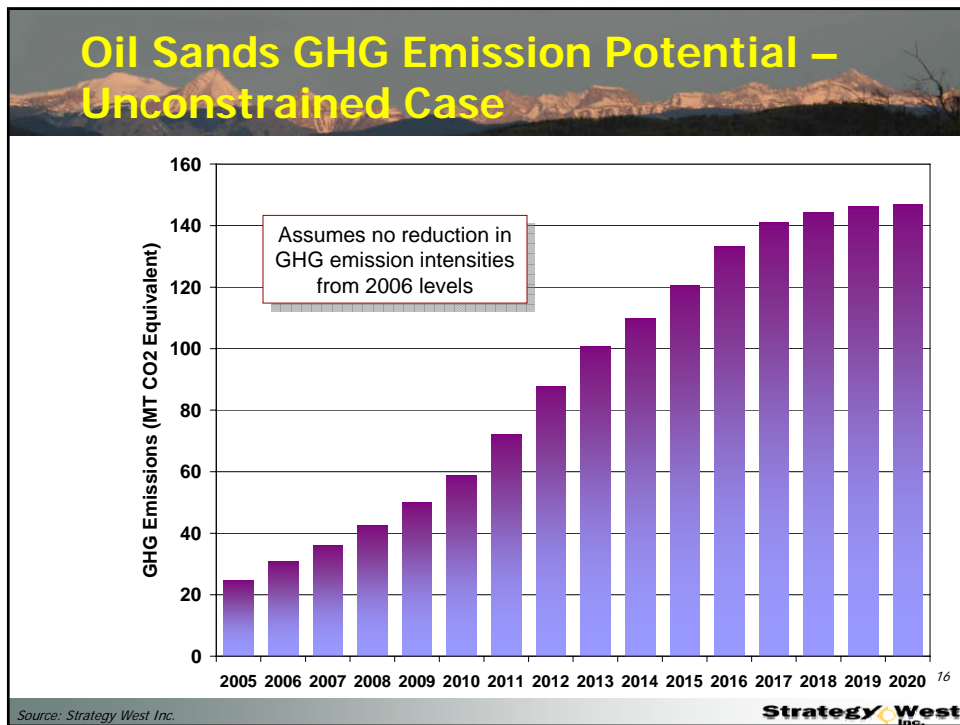
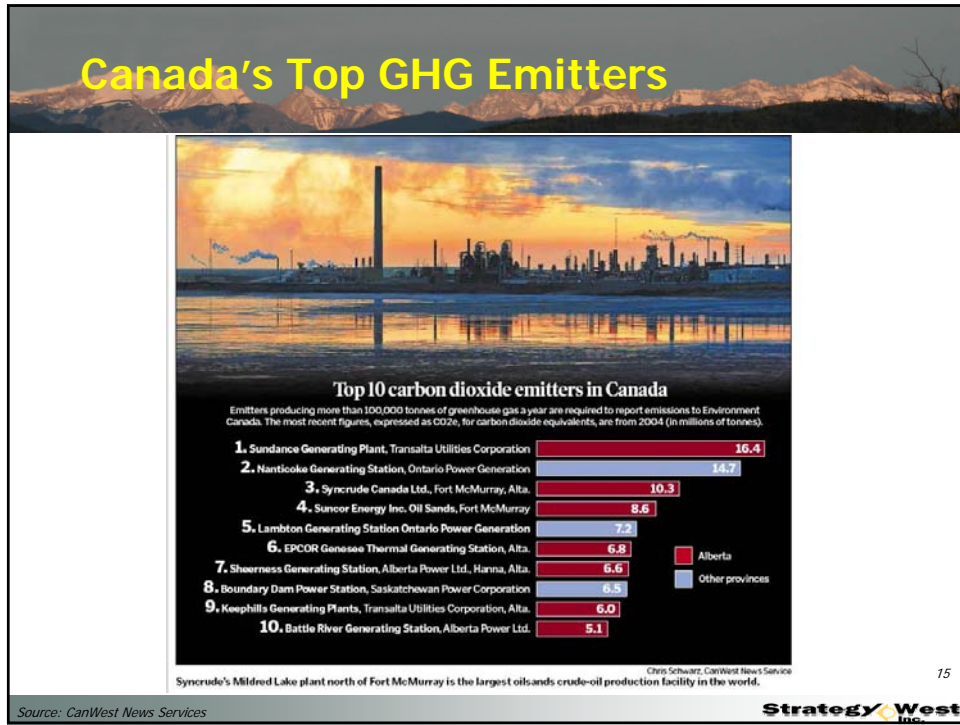
Oil Sands Industry Societal Challenges

- Public Services
 - Health
 - Education
 - Other
- Public Infrastructure
 - Road
 - Water & Sewer
 - Rail
 - Other
- Regulatory Issues
 - Royalties and Taxes (Economic Rent)
 - Regulatory Agencies
 - Staffing
 - Workload
 - Funding
- Pace of Development

13

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Oil Sands Energy and Hydrogen Requirements

Energy

- In situ steam and process heat
- Mining/extraction process heat
- Upgrading process heat
- Electricity

Hydrogen

- Hydro-conversion processes (upgrading)

17

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Current Sources of Thermal Energy, Hydrogen and Electricity

Thermal Energy

- Natural Gas
- Produced Gases (in situ projects)
- Process Gases (upgraders)
- Coke (upgraders)
- Liquid Hydrocarbon Fuels
- Crude Bitumen

Hydrogen

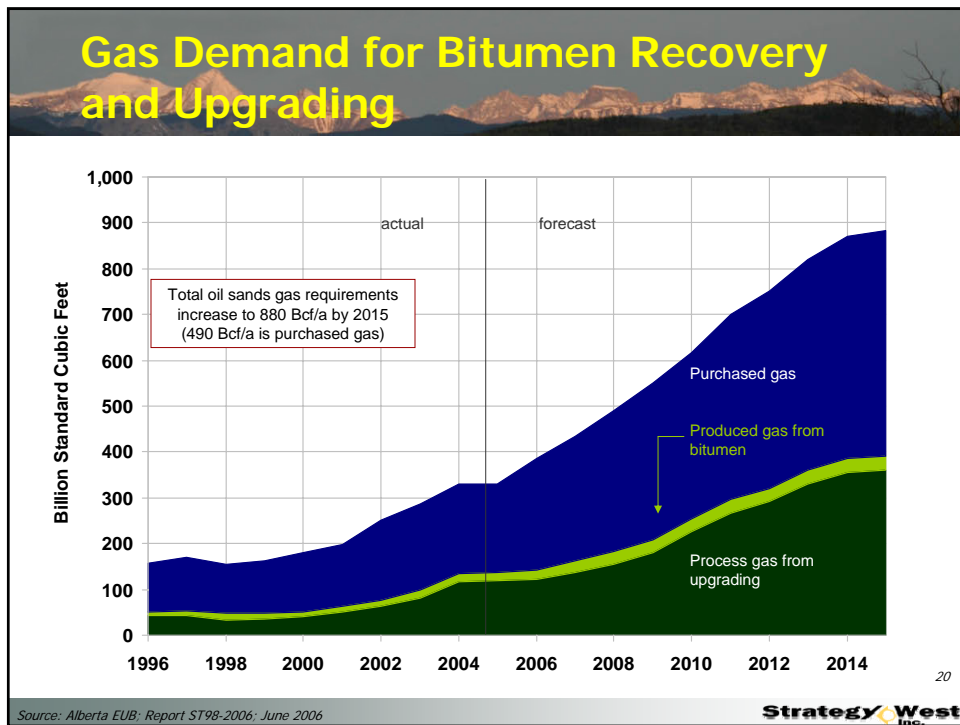
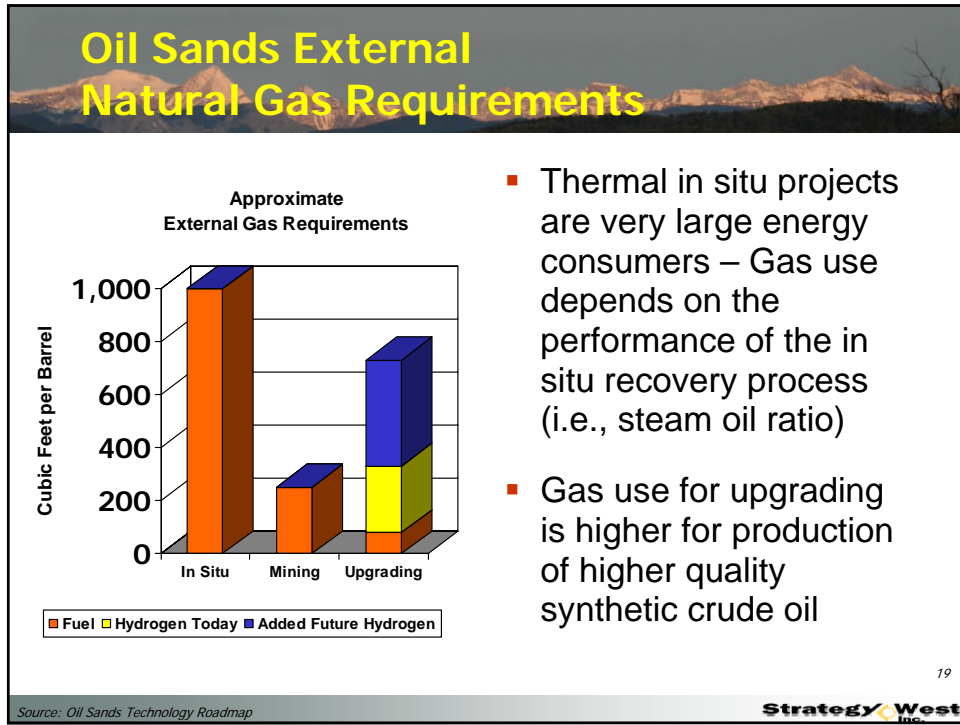
- Steam Methane Reforming (natural gas)

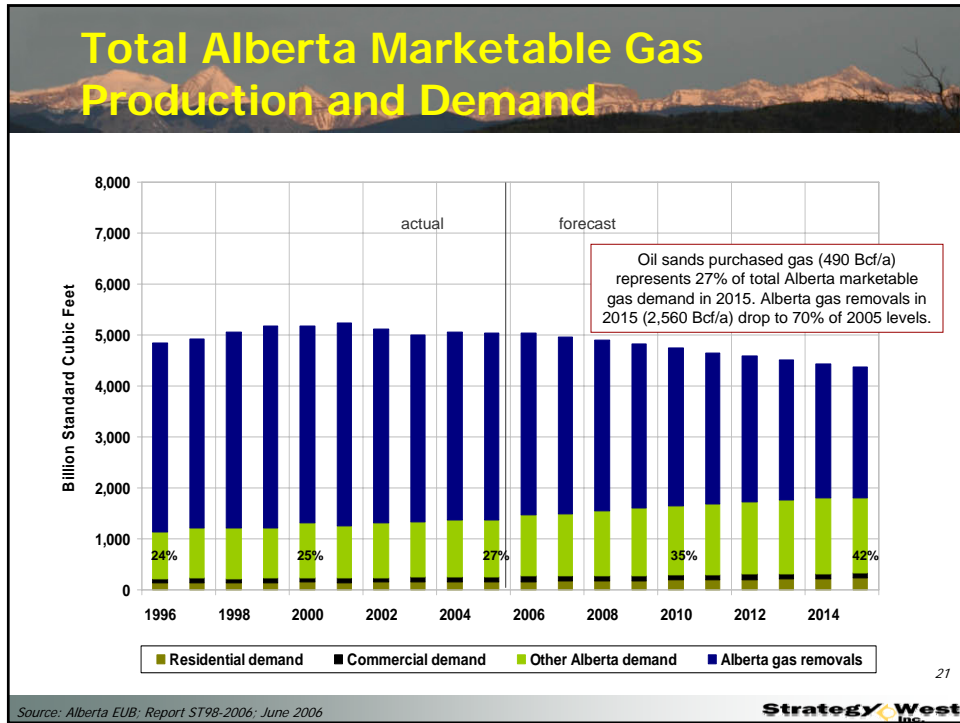
Electricity

- On-site Cogeneration
- Purchased Electricity

18

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Potential Future Sources of Thermal Energy, Hydrogen and Electricity

| Technology | Thermal Energy | Electricity | Hydrogen |
|--------------------|----------------|-------------|----------|
| Bitumen Combustion | ✓ | ✓ | |
| Gasification | ✓ | ✓ | ✓ |
| Nuclear | ✓ | ✓ | ✓ |

It is also expected that oil sands industry energy intensity will be reduced through efficiency improvements and application of new technologies

22

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Oil Sands Gasification Projects

| Project | Status |
|-------------------------|---------------------|
| OPTI/Nexen Long Lake | Under Construction |
| Suncor Voyageur 2 | Application |
| North West Upgrading | Application |
| Synenco Northern Lights | Application |
| CNRL Horizon | Under Consideration |
| CNRL Primrose | Under Consideration |
| Petro-Canada | Under Consideration |
| NAOS Kai Kos Dehseh | Under Consideration |
| Others? | |

23

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Initial CAPEX – Selected Non-Integrated Projects

Steam Assisted Gravity Drainage (SAGD)

| Operator | Project | CAPEX (\$ millions) | Capacity (b/d bitumen) | Unit CAPEX (\$ per b/d) | Startup |
|--------------|----------------|------------------------|---------------------------|----------------------------|---------|
| Suncor | Firebag 2 | \$540 | 35,000 | \$15,400 | Q1 2006 |
| Husky | Tucker | \$470 | 30,000 | \$15,700 | Q4 2006 |
| Connacher | Great Divide | \$240 | 10,000 | \$24,000 | Q3 2007 |
| Petro-Canada | Mackay River 2 | \$800 - \$1,200 | 40,000 | \$20,000 - \$30,000 | 2010 |

Mining and Extraction

| Operator | Project | CAPEX (\$ millions) | Capacity (b/d bitumen) | Unit CAPEX (\$ per b/d) | Startup |
|----------|-----------------|------------------------|---------------------------|----------------------------|---------|
| Synenco | Northern Lights | \$4,400 - \$5,600 | 114,500 | \$38,400 - \$48,900 | 2011 |

24

Source: Company Press Releases and Investor Presentations

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Initial CAPEX – Selected Integrated Projects

Steam Assisted Gravity Drainage (SAGD) with Integrated Upgrading

| Operator | Project | CAPEX (\$ millions) | Capacity (b/d SCO) | Unit CAPEX (\$ per b/d) | Startup |
|------------|-------------|------------------------|-----------------------|----------------------------|------------|
| OPTI/Nexen | Long Lake 1 | \$4,600 | 58,500 | \$78,600 | Q1/Q3 2007 |

Mining and Extraction with Integrated Upgrading

| Operator | Project | CAPEX (\$ millions) | Capacity (b/d SCO) | Unit CAPEX (\$ per b/d) | Startup |
|--------------|---------------------|------------------------|-----------------------|----------------------------|---------|
| CNRL | Horizon 1 | \$6,800 | 114,500 | \$59,600 | Q3 2008 |
| Petro-Canada | Fort Hills 1 | \$12,600 | 140,000 | \$90,000 | 2011 |
| Petro-Canada | Fort Hills 2 | \$8,000 | 100,000 | \$80,000 | 2014 |
| Shell | AOSP Expansion 1 | \$10,000 - \$12,000 | 100,000 | \$100,000 - \$120,000 | 2010 |

25

Source: Company Press Releases and Investor Presentations: Fort Hills Figures from UTS Energy Oct 12, 2006

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Hypothetical Oil Sands Projects – Cost Assumptions

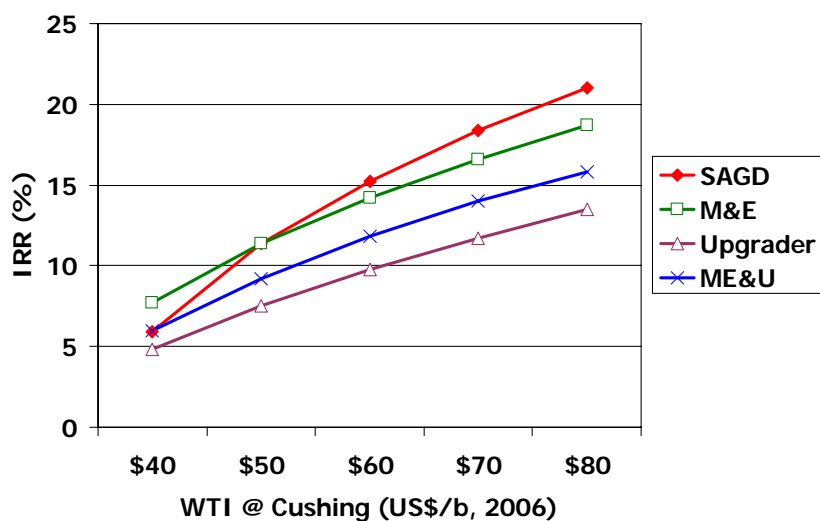
| | SAGD | Mining & Extraction | Upgrading (Coker) |
|--|-----------------------|------------------------|----------------------|
| Product | Dilbit | Dilbit | Synthetic Crude Oil |
| Initial CAPEX (Real 2006 C\$ per b/d) | \$25,000 (Bitumen) | \$35,000 (Bitumen) | \$50,000 (SCO) |
| Non-energy OPEX (Real 2006 C\$ /b) | \$4.00 | \$8.00 | \$4.00 |
| Purchased Natural Gas (GJ/b) | 1.10 | 0.20 | 0.50 |
| Purchased Electricity (kWh/b) | 9 | - | - |
| SCO Yield | - | - | 85% |
| GHG Emission Penalty (\$/t) | - | - | - |

26

Source: Strategy West Inc.

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Hypothetical Oil Sands Projects - Illustrative Investment Returns



Source: Strategy West Inc.

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27

Economic Implications

- Escalating costs have raised the oil sands project investment threshold to US\$50-60/b (WTI at Cushing)
- Others have expressed similar views:
 - Charlie Fischer (Nexen): New projects will need crude prices of about US\$45/b to break even (October 2006)
 - Murray Edwards (CNRL): "These projects, long term, need prices higher than \$50 [US\$/b]"; (October 2006)

28

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Oil Sands Industry Outlooks

- Unconstrained Outlook
 - Assumes all existing and proposed projects are developed and meet their scheduled startup dates
- Constrained Outlook
 - Project-by-project timing adjustments
 - Project-by-project probability assessment

29

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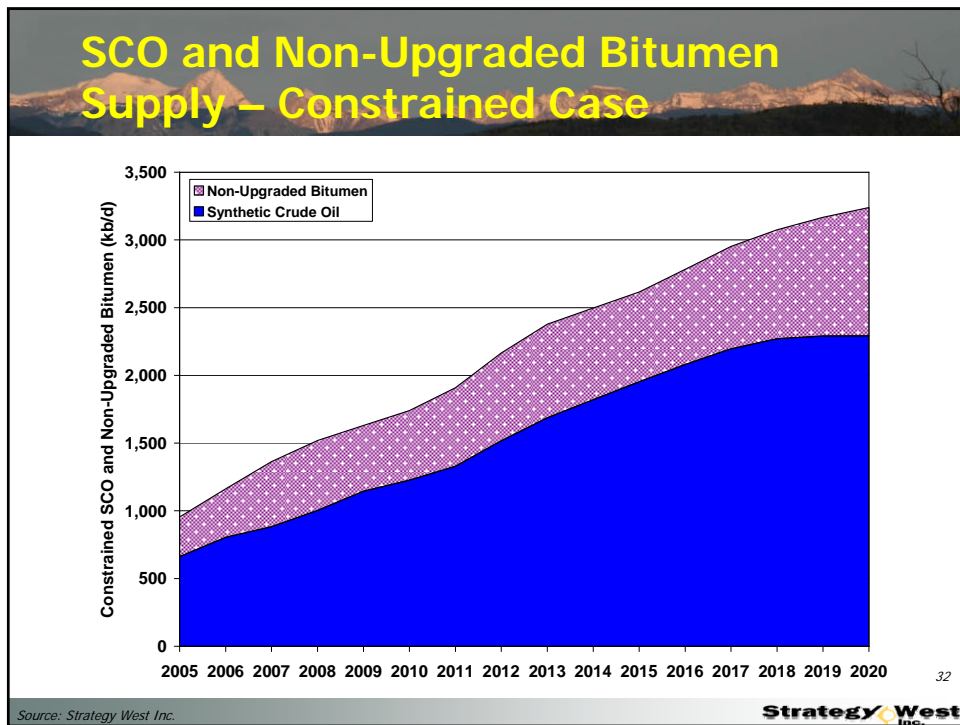
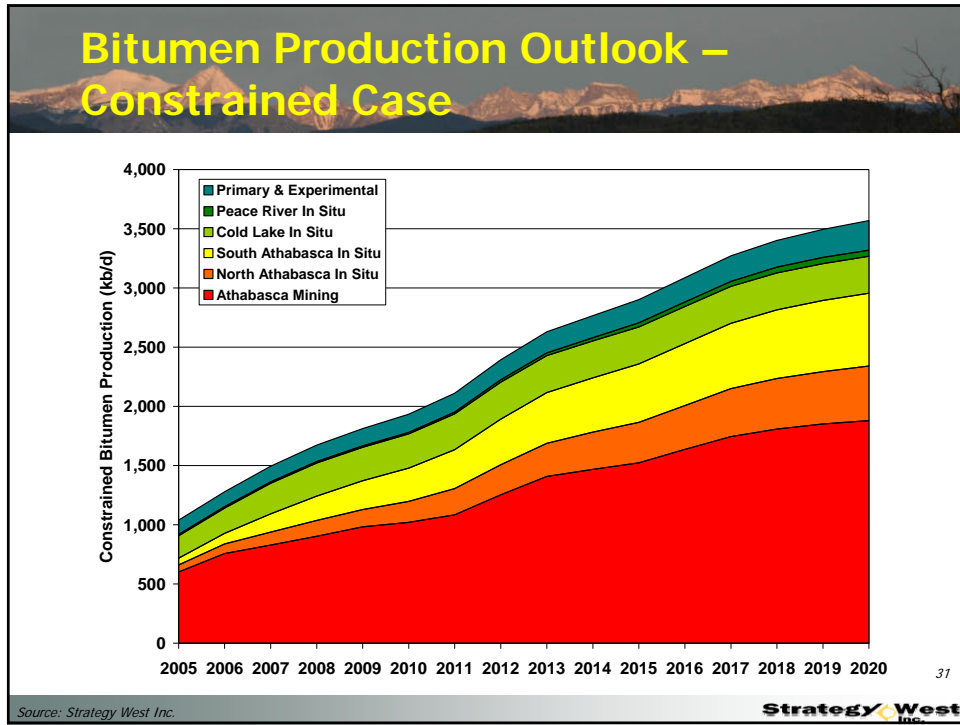
Project-by-Project Timing Adjustments and Probabilities

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ Project Timing <ul style="list-style-type: none"> • Lease Evaluation • Disclosure • Application Preparation and EIA • Application Review and Approval • Detailed Engineering • Internal Approval • Construction • Phasing | <ul style="list-style-type: none"> ■ Project Probabilities <ul style="list-style-type: none"> • Project Status • Owners <ul style="list-style-type: none"> ■ Operating experience ■ Financial capacity ■ Technical capability ■ Other factors • Technology • Existing Operations • Integration • Timing |
|--|--|

30

Source: Strategy West Inc.

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CAPEX – Constrained Case

| | Incremental Bitumen 2005-2020 (million b/d) | Initial CAPEX (\$ per b/d) | Average Annual Initial CAPEX 2005-2020 (\$ billions) |
|------------------------|---|----------------------------|--|
| Mining & Extraction | 1.3 | \$35,000 (Bitumen) | \$3.0 |
| In Situ | 1.2 | \$25,000 (Bitumen) | \$2.0 |
| Incremental Production | 2.5 | | \$5.0 |
| Upgrading | 1.6 | \$50,000 (SCO) | \$5.4 |
| Total CAPEX | | | \$10.4 |

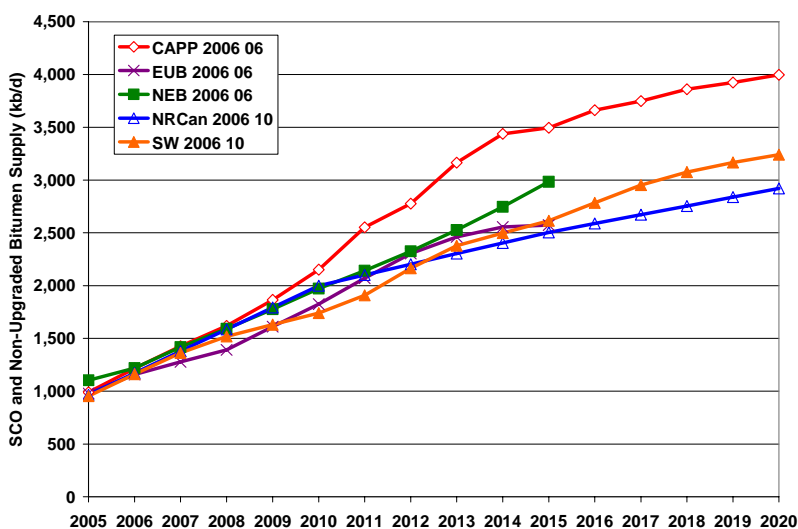
Note: does not include sustaining capital

33

Source: Strategy West Inc.

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Comparative Industry Outlooks



34

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Conclusions

- Canada's oil sands are one of the world's largest hydrocarbon accumulations
- The industry is well developed and making a significant contribution to North American oil supply
- Oil sands projects are experiencing cost pressures but are economically attractive at current high oil prices
- The industry faces many challenges but will overcome them and continue to grow

35

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Thank You

Questions?

Please visit
www.strategywest.com for oil
sands project lists and other
detailed oil sands industry
information

36

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