

Exploring the top 10 opportunities and risks in Canada's oilsands 2012-13



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Executive summary

Companies operating in Canada's oilsands industry will have to manage a number of new opportunities and risks to be successful now and in the future. Our annual report puts Canada's oilsands under the microscope and identifies the top 10 opportunities and risks facing the industry as drawn from our research and conversations with leaders and executives from a number of operators, pipeline companies, oil field service companies, government and associations.

Chief among the risks facing Canada's oilsands industry is rising supply and falling demand from the US, followed closely by market access and infrastructure constraints, and cost inflation.

With the rise of globalization, it's becoming more and more important for Canada's oil and gas industry to break into new markets around the world rather than solely relying on the US. But to access new markets requires significant investment in infrastructure – and fast. To accelerate development, more and more companies are turning to joint ventures and strategic partnerships.

Collaboration also allows companies to share resources, costs, risks and skills, particularly around technology innovation. Technology now plays a critical role in accessing reserves in increasingly difficult and challenging geologic formations, including the oilsands – where bitumen-filled sand deposits can vary from meandering channels to marine sheets. Technological advances have also made the unconventional resource boom possible and are driving improvements in critical environmental efficiencies, such as reductions in water usage and greenhouse gas emissions.

This is especially important as environmental issues, water use and public perception continue to challenge companies operating in the oilsands.

While the oil and gas industry has historically been run by engineers, geologists and geophysicists with efforts focused on below-the-ground issues – there is a clear sense that the future will be all about above-the-ground issues, with geopolitical tensions at the forefront. Geopolitical concerns, particularly around energy security, are creating a real desire for companies to invest in stable markets.

Canada is one of the most attractive markets in the world for inbound investment. The country offers a politically stable economy, strong legal and business systems, unparalleled proximity to the US market and access to world-class expertise.

It's no surprise the oilsands play a significant role in the oil and gas industry, and in giving Canada a global competitive edge. But success for oilsands players won't come easily. Above the ground – or below – the opportunities and challenges for the oilsands create a dynamic environment. Whether the focus is on raising, investing, preserving or optimizing the significant capital required to be a viable oilsands player, understanding the following trends is the first step in turning today's opportunities and challenges into results.

Barry Munro
Canadian Oil & Gas Leader

Lance Mortlock
Partner, Oil & Gas practice



Understanding the oilsands

Canada's oilsands hold immense energy potential and continue to be the primary source of growth for Canada's oil industry. Canada is ranked third in the world for proven oil reserves, behind Saudi Arabia and Venezuela, and 97% of these reserves are in the oilsands (Figure A). These reserves provide the largest revenues in Canada (Figure B) and are a particular boon to other industries and regions, benefiting companies and creating jobs across Canada.

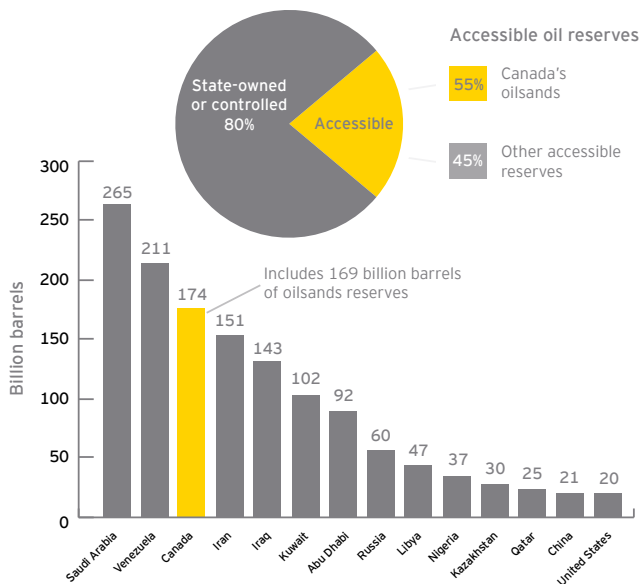
Alberta companies have signed millions of dollars in contracts with other players throughout Canada in key sectors such as machinery and metal fabrication and manufacturing. This latter industry benefits Atlantic Canada – for example, New Brunswick steel manufacturers have signed contracts worth an estimated \$50 million.

Ontario also benefits immensely, with 812,000 person years, or 7% of Canadian employment, resulting

from oilsands activities. BC is a close second, with 713,000 person years, or 6% of total Canadian employment.

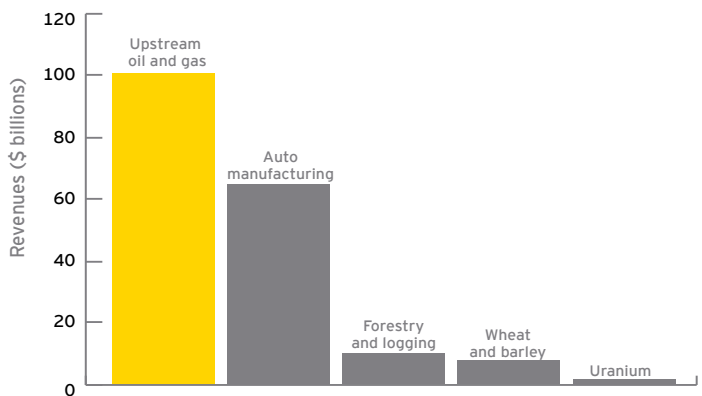
Almost 139,000 Albertans are employed in Alberta's mining and oil and gas extraction sectors, and 23% of oilsands-related employment is outside the province – 28% for construction-related jobs. According to the Canadian Association of Petroleum Producers (CAPP), 550,000 Canadians are directly and indirectly employed in Canada's oil and gas industry.

Figure A
World oil reserves



Source: Oil & Gas Journal, December 2011

Figure B
Oilsands revenues



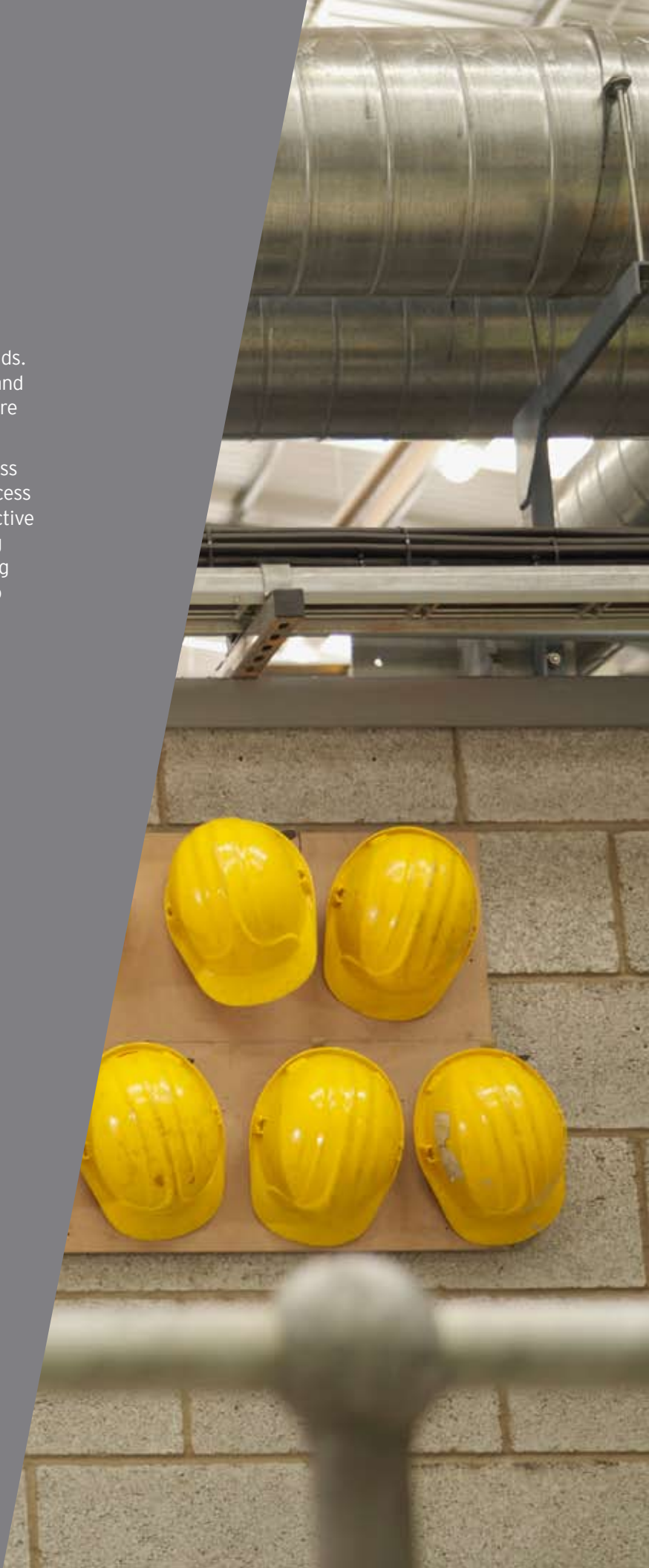
Source: Statistics Canada, CAPP, Canadian Wheat Board, Natural Resources Canada, Canadian Nuclear Association, ARC Financial Corp.

The **top 10** opportunities

This year has been anything but quiet for Canada's oilsands. The industry is well known by players around the world, and changing market dynamics and growing global demand are creating new opportunities for Canadian companies.

With a politically stable economy, strong legal and business systems, unparalleled proximity to the US market and access to world-class expertise, Canada is one of the most attractive markets in the world for inbound investment. Capitalizing on foreign interest by welcoming investment and initiating strategic partnerships can enable Canadian companies to diversify demand, accelerate projects and collaborate on technological and environmental innovations.

- 1 Global demand is growing (1 in 2011)
- 2 Oilsands remain economically important for Canada (2)
- 3 Canada remains an attractive place to do business (4)
- 4 Technological innovation advances (10)
- 5 Environmental awareness is increasing (new)
- 6 Foreign interest is growing (new)
- 7 Project activity is increasing in a controlled way (7)
- 8 The business model is evolving (new)
- 9 Players are working together (new)
- 10 The US remains a key customer (6)





1

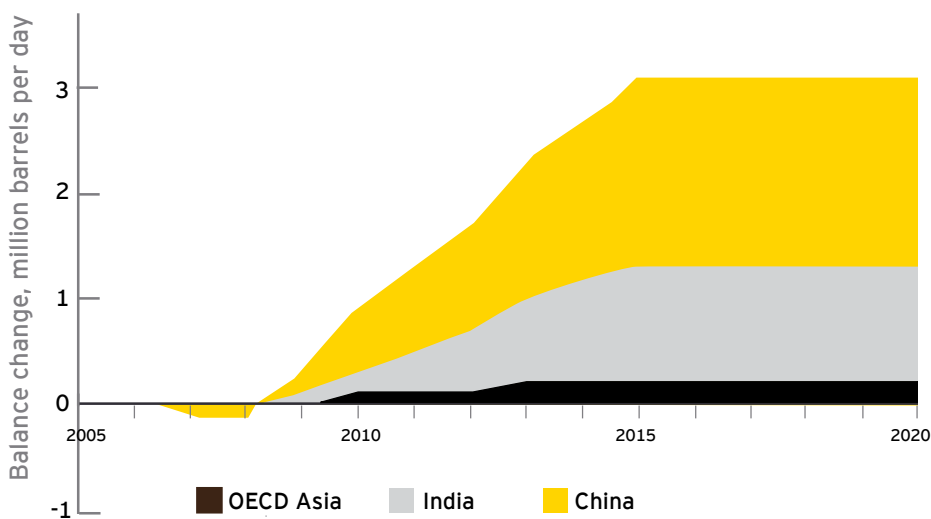
Global demand is growing

Demand for hydrocarbons continues to grow despite short-term softening in some markets

Global demand for hydrocarbons continues to grow despite ongoing economic uncertainty. This demand is crucial for the viability of Canada's oilsands. While oil demand growth has slowed worldwide, the International Energy Agency reports that demand in non-member countries of the Organisation for Economic Co-operation and Development (OECD) remains strong, driven largely by China and India (Figure C). Since new sources of supply are necessary to meet this demand, this makes the oilsands an important factor in global energy supply and creates an immense opportunity for the Canadian economy as a whole.

Figure C

Asia-Pacific heavy crude oil demand change per country (2005-20)



Source: WoodMackenzie

Oilsands benefits

Indirect benefits

Every dollar invested in the oilsands creates approximately \$8 worth of economic activity, with one-third of that generated outside Alberta. Investment into Canada's oil and gas sector was \$50 billion in 2011, with \$21 billion paid to governments, according to CAPP. The association anticipates a \$55-billion investment into Canada's oil and gas sector in 2012.

Government royalties

Royalties from the oilsands consisted of \$1.9 billion in 2009-10, much of which helps Alberta fund public programs and services, including infrastructure, health and education. According to the Canadian Energy Research Institute (CERI), the province can expect \$184 billion in royalties from 2010 to 2035.

Multi-province benefits

Other provincial and municipal governments also receive tax revenue as a result of investment and employment in the oilsands. CERI estimates the oilsands will create more than \$307 billion in tax revenue across Canada over the next 25 years, nearly 61% of which will go to the federal government.

Employment gains

Total employment in Canada resulting from oilsands investment is projected to grow from 390,000 jobs in 2010 to almost 1.6 million by 2035 (Figure D). By 2035, the oilsands are forecast to produce 26.5 million person years of employment, both directly and indirectly.



Oilsands remain economically important for Canada

Canada's oil and gas industry is the number-one sector in terms of GDP contribution

The oilsands industry continues to play an important role in Canada's oil and gas industry – and economy. Over the 25-year period from 2010 to 2035, the oilsands' economic impact to Canada is forecasted to reach nearly \$4.93 trillion in a best-case scenario. Of this, over 90% will accrue to Alberta.

The Canadian government, realizing the economic importance of oilsands development, has backed initiatives that will speed up the regulatory approval process for infrastructure projects, and has supported greater collaboration between provinces to help promote and sustain oilsands development through the global marketing of its products.

Case study - Northern Gateway pipeline

Construction of the Northern Gateway pipeline is estimated to contribute \$3.9 billion to Canadian GDP, and provinces including Quebec and Ontario stand to benefit through the manufacture of oil- and gas-related equipment and the provision of related services.

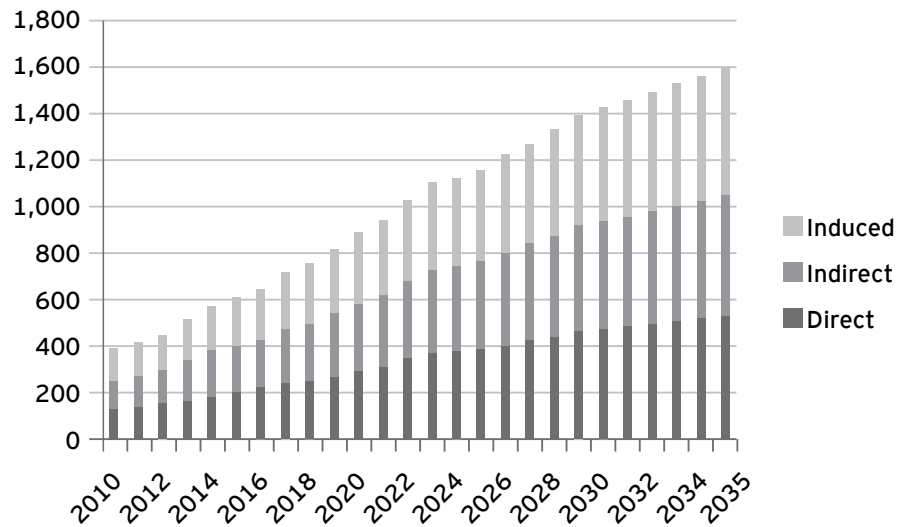
According to a new study released in August 2012 by CERI, British Columbia will benefit most from the construction and operation of the Northern Gateway project, and is expected to collect more than half of the \$8.9 billion the project is expected to add to the Canadian economy over the next 25 years. CERI's analysis focuses on the construction and operation of the pipeline.

Employment in Canada (direct, indirect and induced) is expected to ramp up to 30,000 jobs at the peak of construction and drop down to 2,500 jobs during the operation phase. Northern Gateway will also generate over \$2.3 billion in tax revenues over the 25-year period, with \$1.45 billion going to the federal government, \$545 million to provincial and regional governments in BC, \$162 million to provincial and municipal governments in Alberta, and \$83 million to provincial and municipal governments in Ontario.



Figure D
The oilsands creates jobs

Jobs (x 1,000) created and preserved in Canada, 2010-35



Source: CERl

“The Canadian economy continues to evolve. Increasingly, the oil and gas industry, and the oilsands industry in particular, is becoming a larger and larger contributor to the overall economy of the country. The industry has the ability to make an even larger contribution with the support of the federal government and provincial governments across the country.”

John Zahary

President and CEO, Sunshine Oilsands



3

Canada remains an attractive place to do business

Economic and political security continue to put Canada at the forefront of foreign investment

Canada is one of the most attractive markets in the world for inbound investment. The country offers a politically stable economy, is relatively corruption free, has strong legal and business systems and provides unparalleled proximity to the US market.

Canadian companies and personnel also provide world-class expertise and know-how that is often developed to effectively operate in extreme environments. These skills and experiences themselves are attractive exports around the world.

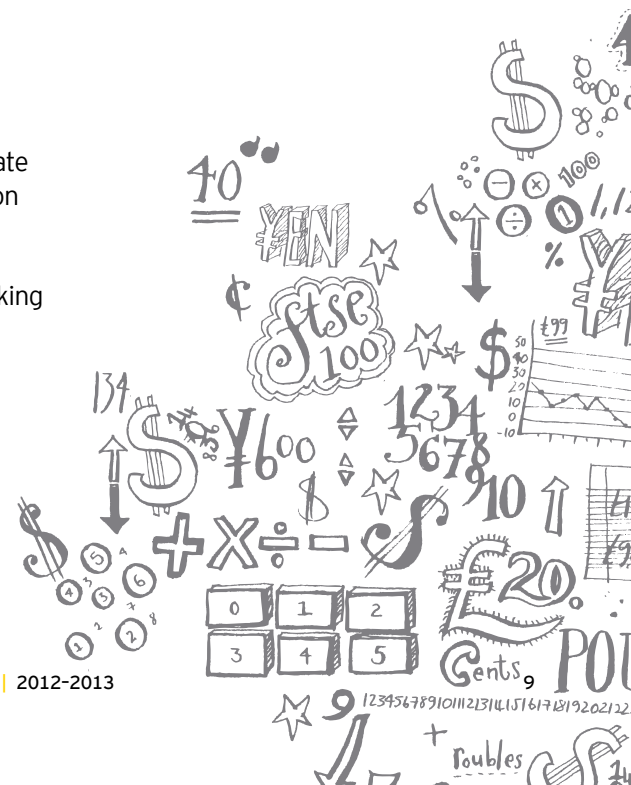
The number of inbound oilsands-focused transactions slowed in 2011, although interest from East and Southeast Asia continued to grow through 2011 and into 2012. China, Japan, Thailand and South Korea are actively seeking to secure natural resources around the world, and can bring funding to highly capital-intensive oilsands projects.

While Canada is warm to foreign direct investment in the oilsands because it brings much-needed capital to accelerate infrastructure development – CERI forecasts over \$2 trillion in investments, reinvestments and revenues will occur in the oilsands between 2010 and 2035 – it also means relinquishing control of strategic resources. Success is striking the right balance.

“Canada remains politically and economically stable, with strong regulatory and environmental governance practices, and actively promotes foreign direct investment into capital-intensive industries such as the oilsands. For foreign investors, Canada remains one of the most attractive places to invest.”

Jongwoo Kim

Chief Strategy Officer, Korea National Oil Corporation Canada



Technologies to watch

4

J-Well gravity-assisted steam simulation

Researchers at the University of Calgary have developed and are testing J-Well gravity-assisted steam simulation, which could result in up to 70% less water usage and carbon emissions.

Heavy-to-light oil

A proprietary process by which bitumen is upgraded to a lighter grade, to produce a higher-value product without the use of diluent.

Solvent-assisted process

Co-injects solvents such as butane and propane, reducing the need for large amounts of steam and decreasing steam-oil ratios.

Wedge wells

Involve incremental horizontal wells drilled between existing well pairs to harness incremental production.

Toe-to-heel air injection

Potential to decrease costs using combustion technology and the vertical injection of air, creating a high temperature that burns the oil, reducing the viscosity of the remaining oil and minimizing the need for water.

Electro-thermal dynamic stripping process

Combines heat-transfer mechanisms to improve efficiency.

Thermal-assisted gravity drainage

Inserts an electric wire into the well and heats the reservoir over a one-year period, avoiding the need for steam while increasing viscosity to allow the bitumen to flow.

Enhanced solvent extraction incorporating electromagnetic heating

Uses a combination of electricity and solvent to decrease viscosity. Process also uses less heat thereby reducing greenhouse gas emissions and energy usage, and requires little to no water.

Technological innovation advances

Early adopters and fast followers stand to gain competitive advantage

Technology continues to play an important role in enhancing extraction activities and reducing environmental impact and operating costs. Companies in the oilsands industry have a significant opportunity to lower their extraction costs and enhance oil recovery through leading-edge technology.

Becoming a technology leader is often dependent on a company's size. Super majors that are able to invest in research and development and high-performing juniors that are able to adopt and integrate new technologies quickly will stand to gain the most. The industry continues to evolve so quickly that those who do not invest in technology risk becoming obsolete.

Collaboration between companies on technology that advances environmental efforts without sacrificing competitive advantage stands to benefit the industry as a whole. The creation of the Canadian Oilsands Innovation Alliance is an excellent example of this innovative thinking.



5

Environmental awareness is increasing

Focus on environmental innovation and investment means long-term benefits for industry

Oilsands companies have a much broader environmental awareness than many other industries due to the amount of publicity they've received in the past. This has led participants to raise investment levels into continued technological innovation to reduce the environmental impacts of oilsands operations.

Tailing pond and land remediation timelines have been substantially reduced through collaboration and the sharing of leading practices among industry players.

Processes to shorten the separation of tailings from wastewater have increased the amount of water being recycled, decreasing freshwater usage. Projects such as Devon Energy's Jackfish in-situ operation extract saline water from deep reservoirs that are not suitable for human use and recycle more than 80% of the water into operations.

The oilsands industry has come to identify sound environmental practices with good business. It's made significant investments in reducing water consumption, air emissions and land disturbance. Industry players' commitment to reducing oilsands environmental impacts is supported by strong environmental governance and enforcement.

Oilsands players have both the opportunity and the need to inform the public of the efforts the industry has undertaken to improve its environmental performance and the efficiencies and improvements made over the life of oilsands production.

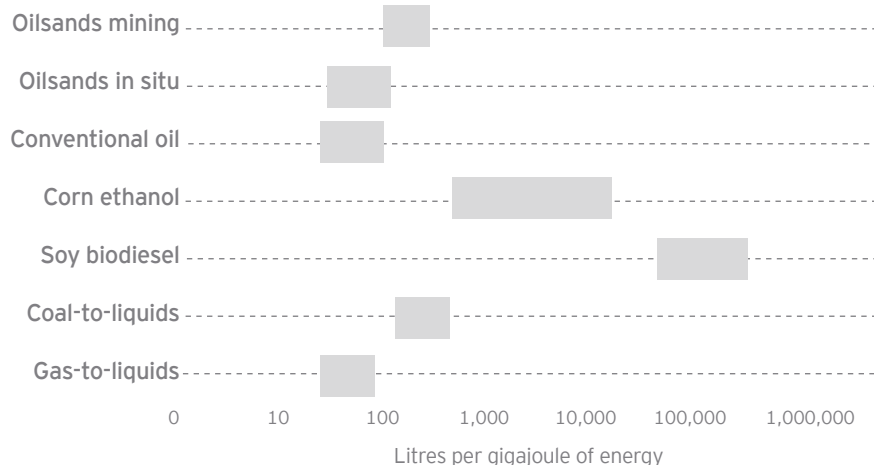
"The 1 March 2012 public launch of Canada's Oil Sands Innovations Alliance, involving 13 companies representing over 90% of production, is a formal declaration of intent to accelerate the pace and scope of environmental performance improvement through deep collaboration and including IP sharing in the areas of water, tailings, land and greenhouse gases. The oilsands industry is creating a new collaborative model for addressing areas of common risk, including the environment and socio-economic development. Developing Canada's oilsands resource in a world-class manner is nation-building work."

Gord Lambert

Vice President, Sustainable Development, Suncor Energy

Figure E

Life-cycle water use of various energy sources



Source: Cambridge Energy Research Associates, US Department of Energy



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Foreign interest is growing

Foreign investment can accelerate the development of Canada's hydrocarbons

Canada's oilsands are quickly appearing on the radar of global companies, particularly in Asia and other emerging markets, looking to replace reserves and secure a long-term source of supply. Investment by Asian national oil companies (NOCs) is creating an opportunity to accelerate the value and development of a number of oilsands properties that would otherwise not move at the same pace or not get developed at all.

Though Asian investment in Canada was virtually non-existent in 2008, factors such as rising oil prices, growing demand in non-OECD countries, high debt levels of junior players – and Canada's huge oil reserves, stable financial and regulatory environment, proximity to the US and well-established infrastructure – have driven the growth over the last few years.

Chinese investment in Canada started as small interests in non-operated capacities, and has now become more aggressive and operated in nature (Figure F).

With Canada's relationship with Asia still in the early phase, Canadian companies may still be able to gain an early advantage by partnering with foreign companies. Joint ventures and partnerships offer access to key foreign markets with growing energy demand, and for Asia and other global buyers, they provide long-term access to secure and reliable resources.

"For crude oil exports, Asia is critical to Canada, especially since growing demand markets for energy in the future will come from Asia and Latin America."

Terrance Kutryk
President and CEO,
Alliance Pipelines



Figure F

Asian investment in Canada's oilsands*

Country Company	Year	Result	Type
China CNOOC	2012	Proposed acquisition of Nexen Inc. For \$15.1 billion	Operated
China Sinopec	2012	\$1.5 billion for a 49% stake in UK division of Calgary's Talisman	Non-operated
China PetroChina	2012	\$680 million for remaining 40% portion of MacKay River project from Athabasca Oil Corp.	Operated
Malaysia Petronas	2012	\$5.5 billion to acquire Progress Energy Inc.	Operated
China Sinopec	2011	\$3-billion acquisition of Daylight Energy Ltd.	Operated
China CNOOC	2011	\$2.1 billion for full ownership of OPTI Canada	Non-operated
China PetroChina	2011	\$5.4 billion for 50% of Encana's Cutbank Ridge project	Non-operated
China China Investment Corporation	2010	\$435 million for a 5% stake in Penn West	Non-operated
China China Investment Corporation	2010	\$817 million for a 45% stake in an oilsands project owned by Penn West Energy Trust	Non-operated
Korea Korea Investment Corporation	2010	\$100 million worth of shares in Osum Oilsands Corp.	Non-operated
China Sinopec	2010	\$4.65 billion for a 9% stake of Syncrude Canada Ltd.	Non-operated
Thailand PTT E&P	2010	\$2.3 billion for 40% of StatOil ASA's oilsands project	Non-operated
Korea Korea Investment Corporation	2010	\$50 million for minor stake in Laracina Energy Inc.	Non-operated
Korea Korea National Oil Corporation	2010	\$4.1 billion to acquire Harvest Energy Inc.	Operated
China Sinopec	2009	Purchased additional portion of Total SA's Northern Lights project, raising stake to 50%	Non-operated
China PetroChina	2009	\$1.9 billion for 60% of two undeveloped projects run by Athabasca Oil Corp.	Non-operated
Japan Inpex Corp.	2007	\$ Undisclosed for a 10% stake in Total's Joslyn oilsands project	Non-operated
Korea Korea National Oil Corporation	2006	\$270 million for Blackgold Oilsands property (owned by Newmont Mining Corp).	Operated
China CNOOC	2005	\$150 million for 14.7% stake in MEG Energy	Non-operated
Japan Mitsubishi Oil Company of Alberta	1992	(Now a unit of JX Holdings) Purchased a 5% stake in Syncrude Canada	Non-operated
Japan Japan Canada Oilsands Ltd.	1978	Acquisition of oilsands properties. Developed a SAGD pilot project in 1983 (Hangingstone). In 2008, Nexen acquired a 25% stake in the property.	Operated

*May not represent all transactions

7

Project activity increasing in a controlled way

Companies are evaluating the pace and size of projects to control risk

Undertaking new projects in a controlled way comes with high success rates and the advantage of delivering projects on time and budget. By breaking projects up into more manageable stages, companies can also better control risk and increase the certainty of outcomes.

Those looking to enter the oilsands space must think carefully about wider project constraints, including workforce, material costs and the timing of projects. Understanding these dependencies allows companies to effectively schedule and plan projects with a pace and size the industry can cope with.

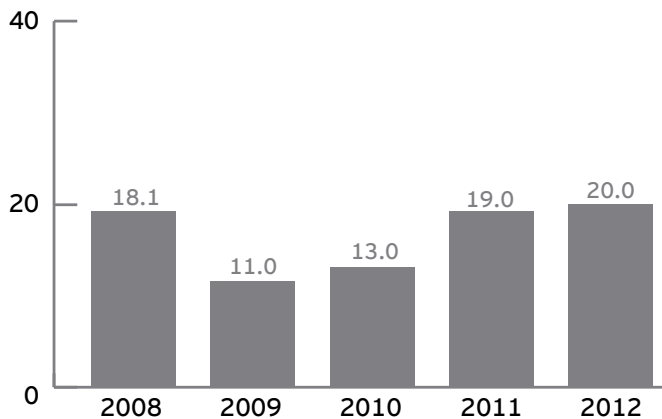
While oilsands projects are becoming smaller and more modular (even large, multibillion-dollar projects are being broken down into smaller pieces to mitigate risk and gain more support from investment committees within oil and gas companies), the number of projects coming on line continues to push up the investment numbers.

Big producers are staging their projects in order to manage costs more effectively and to minimize their committed capital. The introduction and commercialization of technology (e.g., SAGD) has provided the opportunity for smaller entrants with smaller capital budgets to successfully enter the oilsands market.

Industry participants are collaborating to help ensure the oilsands are growing in a more manageable and sustainable manner than in the past.

Figure G

Oilsands capital spend (\$ billions)



Source: Canadian Association of Petroleum Producers

“Segmentation of oilsands investment is an excellent way to manage both capital and execution risk. It can also facilitate maximized access to global supply markets – for example, overseas fabrication of modules. However, the economy of scale is still an important counterbalance in the equation, particularly in the case of mining-based development.”

Mark Becker

Vice President, Oil Sands Ventures, Fort Hills, Suncor Energy



8

The business model is evolving

Changing industry dynamics are creating opportunities for new market entrants

Lower breakevens associated with SAGD projects are driving a shift in industry emphasis and dynamics that is creating new opportunities for smaller players to enter the market and for larger companies to become leaner. Of the oilsands projects/ phases with planned start-ups between 2012 and 2015, 12 are SAGD projects while four are mining projects.

We're seeing players like MEG Energy, Laricina Energy and Osum Oil Sands focus on SAGD-type projects and operations with smaller production, high degree of control and no upgrading capacity. BlackPearl Resources Inc., Cavalier Energy Inc., Sunshine Oilsands Ltd., SilverWillow Energy Corporation and Ivanhoe Energy Inc. have also made their debut in the industry.

Grizzly Oil Sands ULC is yet another example of a company redefining the operating model with a proprietary development model that aims to cut costs, downtime and risk. Its Advanced Relocatable Modular Standardized (ARMS) development model requires half as much acreage for a central plant as a conventional SAGD operation. ARMS will allow smaller bitumen pools to be produced, and it will reportedly cut in half the time it takes to extract all the recoverable bitumen from larger pools.

Mining projects are more labour intensive and face higher cost issues in a tight labour environment. SAGD is less labour intensive, easier to manage and therefore generally has a better track record of being on time and on budget than mining.

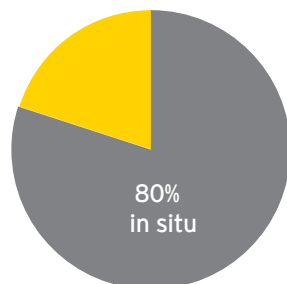
Using a 10% discount rate and a 40% bitumen differential to West Texas Intermediate (WTI), Wood Mackenzie estimates breakevens for various oilsands projects to be as follows:

- ▶ SAGD projects - \$60/bbl
- ▶ Integrated mine with an associated upgrader - \$100/bbl
- ▶ Non-upgraded mine - \$80/bbl

Figure H

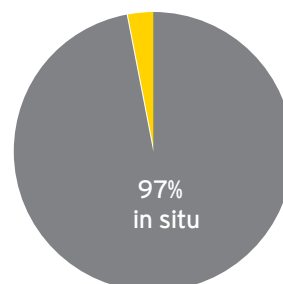
Oilsands reserves

20% Mining



Oilsands surface area

3% Mining



Eighty percent of the oilsands resource will be developed through in situ drilling, which accounts for 97% of the total surface area of the oilsands region in Alberta.

Source: CAPP

Collaborative partnerships

Canadian Oil Sands Network for Research and Development (CONRAD)

Encourages, initiates and supports collaborative research in the oilsands by bringing together industry research needs and ideas, and research sponsors and providers.

Canada's Oil Sands Innovation Alliance (COSIA)

An alliance of oilsands producers that focuses on accelerating the pace of improvement in environmental performance in Canada's oilsands through collaborative action and innovation.

Oil Sands Leadership Initiative (OSLI)

A collaborative network between ConocoPhillips Canada, Nexen Inc., Shell Canada, Statoil Canada, Suncor Energy Inc. and Total E&P Canada, to improve the oilsands' reputation by demonstrating and communicating environmental, social and economic performance and technological advancements.

Oil Sands Tailings Consortium (OSTC)

Fosters innovation and collaboration on tailings research and technology development to rapidly advance tailings management.

Advancing Canadian Wastewater Assets (ACWA)

A partnership between the University of Calgary and the City of Calgary to develop wastewater treatment technologies that will remove existing and emerging contaminants to improve ecosystem and human health.



Players are working together

Companies are collaborating to better the industry, the marketplace and the environment

An increasing number of Canadian firms are beginning to see the benefits of sharing risk and pooling Canadian intellectual capital and technology with foreign parties with appropriate financial strength and a strategic need for resources.

Collaborating through joint ventures (JVs) and partnerships enables both companies to share leading practices in areas such as technology, environmental reclamation, social and economic performance as well as create a common labour pool to maximize resources. This teaming is also giving companies access to the capital they need to get projects off the ground and outpace competitors. Collaborating with foreign parties can provide Canadian companies with access to overseas markets to distribute and market their resources, as well.

Companies that will be successful will be those that can address the competitive challenges when collaborating and work with others for the long-term benefit of the industry as a whole. It's about striking the right balance between protecting your competitive advantage and furthering your position in the marketplace. Taking a planned approach to joint venture and partnership strategy, optimization and execution can help contribute to success.

"Joint venture partners can bring both technical and financial capabilities to an oilsands project. Foreign partners are often focused on long-term value, which aligns well with the long-term nature of oilsands development."

Corrina Bryson

Director, Planning, Economics and JV Management, Oil Sands Nexen



10

US remains a key customer

Canada continues to be highly integrated into the US economy

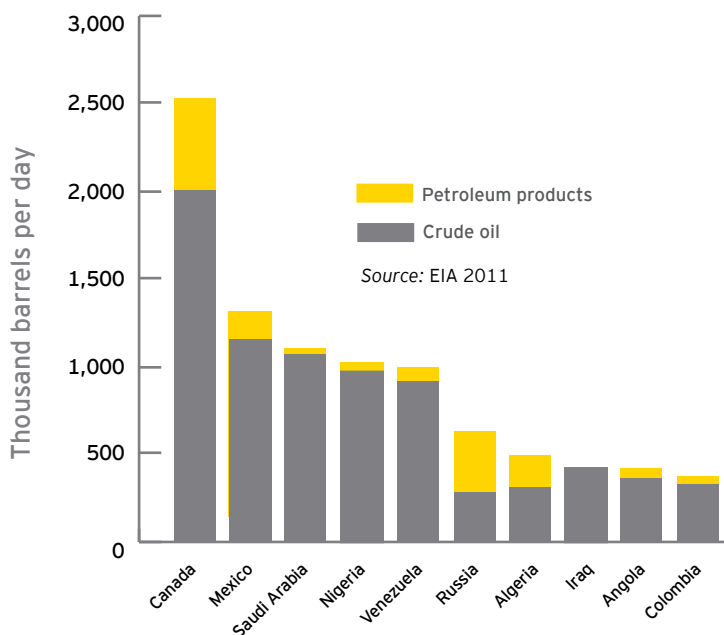
The US continues to be an important customer for the Canadian oilsands. Geographic proximity ensures Canada will remain highly integrated into the US economy in spite of the country's desire for energy independence.

Canada is the world's sixth-largest crude oil producer, supplying an average of nearly 2.2 million bbl/day – or approximately 25% of US imports (Figure I). CAPP forecasts that this will reach 3.7 million bbl/day if the necessary supporting infrastructure is put in place.

Improved market access over the long term will not only create new opportunities for Canadian companies, but will also boost job-creation efforts south of the border. Wood Mackenzie estimates new pipeline infrastructure could result in 520,000 jobs by 2030 for US workers.

Figure I

US imports of crude oil and petroleum products by country of origin



The top 10 risks

There's no denying Canada's potential in the global oil and gas market, but success for players won't come easily in the years ahead. With so many complex issues at play for oilsands companies, there's great potential to capitalize on the opportunities and face the challenges. Canadian companies will have to tie down new long-term customers, accelerate infrastructure development and seek new capital sources, to make their mark on the world stage.

Increased investment from sources outside the US is changing the way Canadian companies think and operate. Further investment from foreign demand markets, particularly Asian markets, will require a greater understanding of the business practices, processes and cultures of other countries. Though companies will undoubtedly face growing pains and encounter challenges, the benefits are tenfold. Those that are up to the test will come out on top.

Canada's oilsands industry holds great resource potential but new and existing risks are putting companies to the test. In today's ever-evolving market companies can't afford to sit on their heels. Taking action against this year's top risks is the first step in capitalizing on our top ten emerging opportunities.

- 1 Rising supply and falling demand in the US (new)
- 2 Market access and infrastructure constraints (3 in 2011)
- 3 Cost inflation (1)
- 4 Labour availability (2)
- 5 Environmental impact (8)
- 6 Reputation management (new)
- 7 Large upfront capital investment (4)
- 8 Changing policy and regulation (5)
- 9 High demand for water (7)
- 10 First Nations relations (new)



1

Rising supply and falling demand in the US

US well on track to outpace foreign markets in oil production in the next 10 years

The US is the largest export market for Canada's oilsands. Remaining dependent on a single market leaves Canada's oilsands exposed to the consequences of being unprepared if the US were to turn to new supplies, use a new product or continue to battle economic challenges that limit the growth of its demand for crude oil. After years of declining production, US crude oil production is on the rise. Game-changing technology – such as horizontal wells using multi-stage fracture stimulation – is enabling producers to tap into new oil reserves in the US midcontinent.

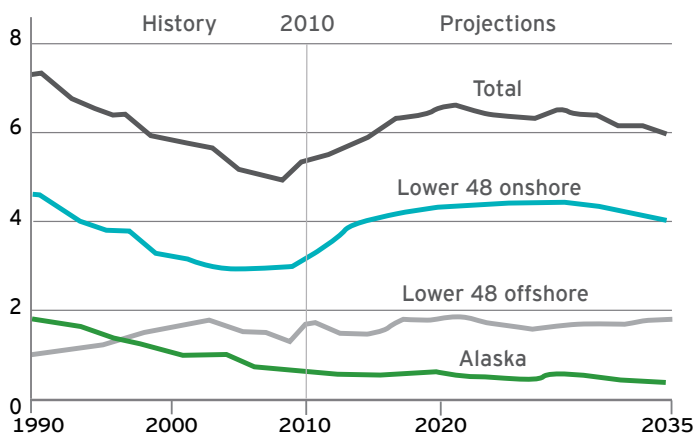
The Bakken formation in North Dakota and Montana has immense reserves and is experiencing exponential growth ahead of expectations. Output has been increasing at a steady rate since 2009 and shows no signs of slowing. The formation is well on track to rival production of some of the world's most elite oil fields.

This poses a risk to Canada's oilsands producers in the long term as the US becomes less dependent on foreign crude imports. US domestic production is projected to reach 6.7 million bbl/day by 2020 (Figure J), and net imports of petroleum and other liquids is projected to fall to 36% in 2035, according to Energy Information Agency.

Figure J

US crude production expected to increase

Domestic crude oil production by source, 1990-2035 (million barrels per day)



Source: EIA

"The US will always be a key trading partner for Canada. However, given the combination of growing US oil and gas production and slowing demand growth, together with continuing pipeline constraints, Canada must look to diversify its markets and the routes to those markets. And if Canada wants to fully realize the opportunity to serve new and growing markets, it needs to move quickly – because the opportunity will not be there forever."

Lorraine Mitchelmore

President and Canada Country Chair, Shell Canada

Recommendation

Diversification of market demand

Canada's oil and gas market will need to find ways to break into new markets around the world. Some analysts argue that the US should remain the market of focus, but if US consumer behaviour and demand trends shift in the future, it would be more prudent for Canadian participants to consider multiple demand channels.



2

Market access and infrastructure constraints

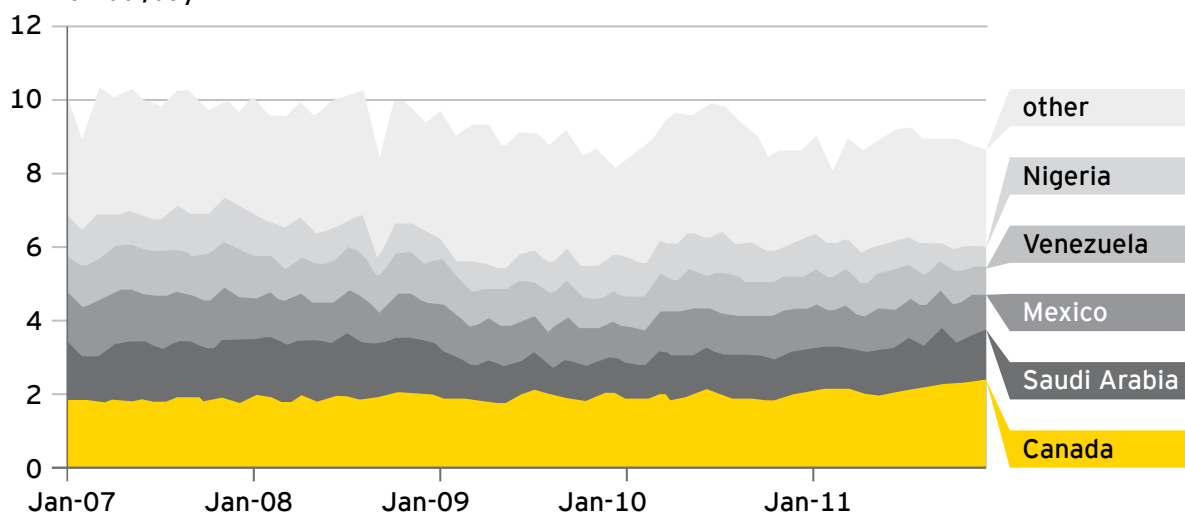
Window of opportunity to serve foreign markets is finite

As production grows in Canada's oilsands and US tight oil, there is an urgent need for producers to access emerging demand markets, particularly in Asia. But to supply these markets, Canada's oilsands industry will have to invest in significant infrastructure upgrades.

| Figure K

Canada can fill US crude demand that has traditionally been met by other countries

Monthly US crude oil imports, January 2007 to December 2011
million bbl/day



Source: US Energy Information Administration, US Imports Country of Origin.

“What shippers are recognizing is that they can’t assume anymore that the next pipeline to the next market is built easily and in the timeframe that they want.”

Ian Anderson

*President,
Kinder Morgan Canada*

“Due to increasing global competition and current pipeline constraints, Canada needs to develop and implement as quickly as possible new transportation options and capacity to export its abundant energy to Asia and achieve market diversification.”

François Nguyen

*Director, International Energy
Policy, Alberta Energy*

Supplying the US

There’s a significant need for new pipeline and transportation capacity from Canada to the US. Oil pipeline capacity out of Western Canada is close to full utilization. In fact, the current pipeline infrastructure out of Western Canada will not be adequate to transport the forecasted oilsands volumes by 2015.

While in the short term it is expected that crude oil transport by rail will increase because of the ability to use existing rail infrastructure, there is a longer-term need for increased investment in the construction of new pipelines, pipeline reversals and repurposing.

Developing necessary pipeline infrastructure requires significant time and capital investment, resulting in a delay in dealing with supply surplus challenges. At the same time, proposed pipelines are facing environmental and political opposition, further delaying construction. That means that some of the challenges facing oilsands producers, including price differentials impacting margins, could be a longer-term issue.

Producers and refiners are also eager to sign up for capacity in order to put the majority of their risk in upstream production and downstream refining. They’re prepared to hold that capacity and pay the fixed toll because it is small relative to their capital investment.

Supplying Asia

If Canada wants to export to Asia, long-term contracts and new pipelines will be needed in order to secure future demand. Canada will also need to run crude pipelines to its Pacific coast to increase its supply to Asia. The proposals, however, have met with resistance from First Nations communities and the public because of environmental concerns about pipeline transport through British Columbia and tankers off the West Coast.

Canada’s West Coast is an attractive target for Asian countries because the export distance is shorter than it is from the US or the Persian Gulf, which results in lower transportation costs.

| Recommendation

Construction of the required infrastructure

Consider how bitumen and crude products will travel to new and existing customers and focus on developing the necessary infrastructure.

Pursue innovative infrastructure solutions

Companies should pursue and evaluate innovative solutions to infrastructure constraints, ranging from refining reserves in Alberta, to using rail and underutilized pipelines.

3

Cost inflation

Significant signs of cost inflation create long-term concerns

While higher oil prices have boosted revenues, operating costs have also increased. Compared with traditional oil recovery methods, Canada's oilsands represent a more technically complex and expensive endeavour, and signs of cost inflation are re-emerging.

Companies face a variety of challenges from a cost perspective. At the most basic level, a company that wants to grow can't be operated at a low cost. And it's often difficult for rapidly growing – and sometimes very large – organizations to even know where to start cutting costs. There is also concern over losing suppliers to competing projects in a seller's market, which can stall growth and alienate stakeholders.

Operating costs

In its report *Canadian Oil Sands Supply Costs and Development Projects (2011-2045)*, CERI estimates that while capital costs in the oilsands have declined by 3.6%, operating costs have risen by 5.8%, reflecting higher crude oil prices, rising natural gas use and increased construction costs. Operating costs also went from \$19.6/bbl in 2006 to \$25.5/bbl in 2010 – at the high end of the global scale.

Total non-energy operating costs have increased to \$9.2/bbl of production for SAGD producers, and mining saw an increase to \$14.6/bbl of produced bitumen. These figures reflect the fact that ongoing labour, materials and equipment costs have seen the greatest increase in recent years.

Project costs

The oilsands continue to witness project cost overruns, driven partly by higher labour, service (including drilling) and commodity costs such as steel and other raw materials.

An unprecedented 16 projects are expected to start in the next four years, pushing the level of activity in the oilsands above previous thresholds. This has the potential to continue to escalate costs and exacerbate market access issues.

Not only that, producers compete for the same materials – such as steel, concrete and wiring – with producers in the Middle East and China.

Labour costs

Alberta has the lowest unemployment rate and highest average hourly wages in Canada, and those wages have increased steadily over the last decade. According to a bi-annual survey conducted by the provincial government, oil and gas extraction has the highest hourly wage and lowest vacancy rate compared to other industries.

Commodity price volatility

Given uncertainty in the North American, global and local economies, political instability in North Africa and the Middle East, demand-supply imbalances, the impact of OPEC and currency fluctuations, oilsands companies are finding it difficult to plan for the future, which affects their ability to manage costs.



Figure L

An unprecedented 16 oilsands projects are expected to start in the next four years.

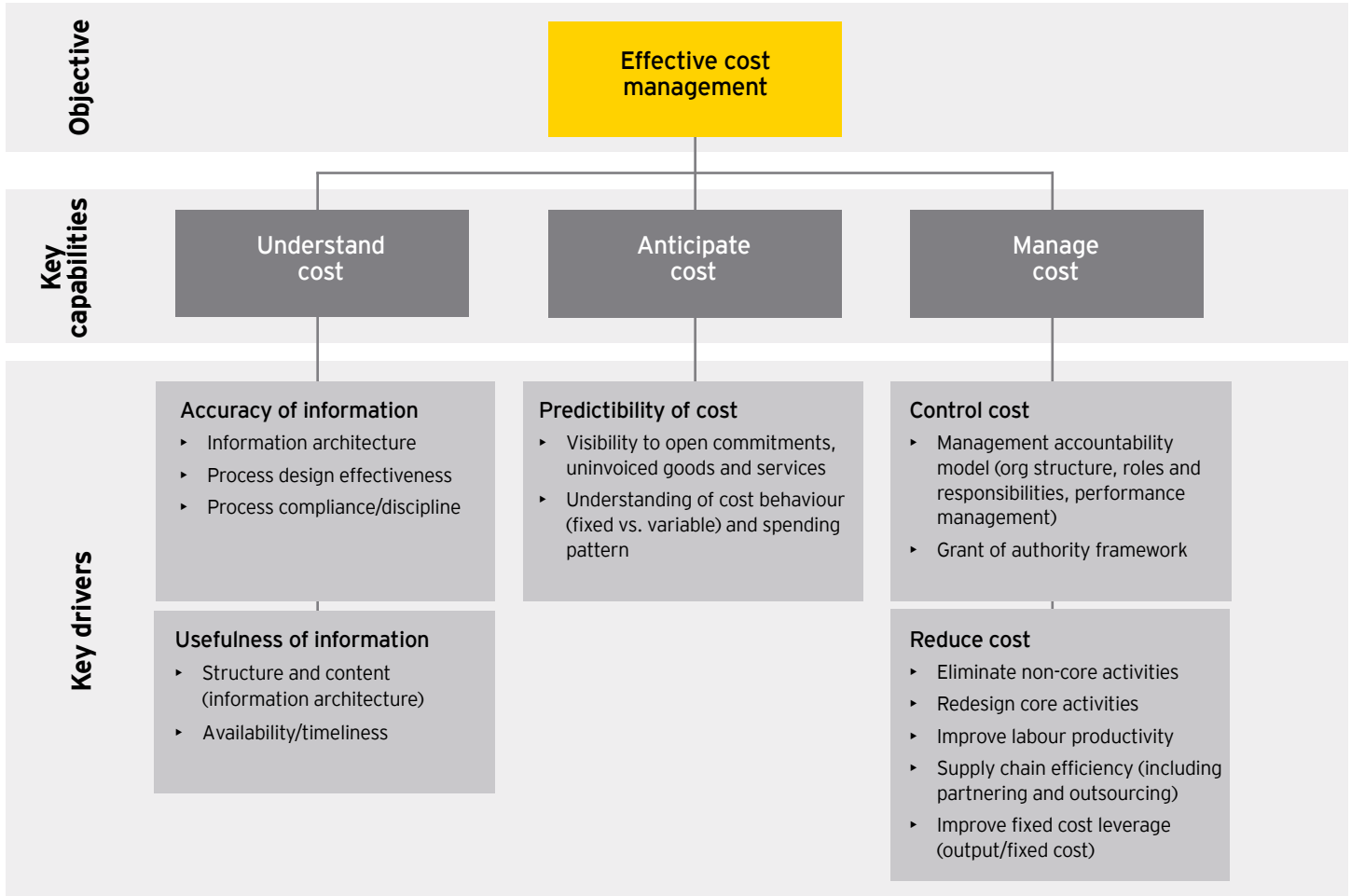
Project name	Operator	Project type	Expected start-up	Sanctioned	Ultimate peak production (,000 b/d bitumen)
Kearl Phase 1	Imperial Oil	Mine	2012	Yes	150
Firebag Phase 4	Suncor	SAGD	2013	Yes	63
Christina Lake Phase 1E	Canovus	SAGD	2013	Yes	40
MEG Christina Lake Phase 2B	MEG Energy	SAGD	2013	Yes	35
AOSP Muskeg Expansion	Shell	Mine	2014	Yes	115
Sunrise Phase 1	Husky	SAGD	2014	Yes	60
CNRL Kirby - South Phase 1	CNRL	SAGD	2014	Yes	45
Foster Creek Phase F	Cenovus	SAGD	2014	Yes	45
Cold Lake Phases 14-16	Imperial Oil	CSS	2014	Yes	40
Mackay River Phase 1	PetroChina	SAGD	2014	No	35
Horizon Phase 2A	CNRL	Mine	2014	No	12
Kearl Phase 2	Imperial Oil	Mine	2015	Yes	150
Surmont Phase 2		SAGD	2015	Yes	83
Foster Creek Phase G	Cenovus	SAGD	2015	Yes	40
KKD - Corner	Statoll	SAGD	2015	No	40
Jackfish Phase 3	Devon	SAGD	2015	Yes	35
Long Lake - Kinosis 1A	Nexen	SAGD	2015	Yes	20
Total					1,008

Source: Wood McKenzie

"Managing the large-scale, billion-dollar projects in our industry is incredibly complex, especially when market dynamics are constantly changing. What sets a successful investment strategy at one organization apart from another is a relentless focus on cost management, process discipline and the appropriate system controls."

Munir Patel

General Manager, Regional Infrastructure, Regional Development, Wood Buffalo, Suncor Energy



Recommendation

Cost management

Companies can address cost issues early by taking an enterprise-wide approach to cost management, setting targets, analyzing and examining improvement levers to identify improvement opportunities, managing the implementation of initiatives to deliver benefits, and implementing a cost-reduction program.

Improving operating model

Industry players should evaluate their operating model to seek opportunities for improving business performance efficiencies, including on-site requirements for people, low-cost country sourcing, remote operations and better use of technology. Companies should look at the people, process and technology components of their operating model to be sure they are strong enough to compete in this competitive market. Companies should also seek opportunities to create centres of excellence to drive operational efficiency and reliability, particularly when the company has size, scale and enterprise program management offices to help prioritize internal initiatives and ensure the company is focused on using its limited resources on improving the right things.



4

Labour availability

Increased project activity continues to exacerbate skills shortage

In the coming years, the oil sector is facing a looming demographic and labour market crisis. Baby boomers are starting to retire, and their numbers are large. There may not be enough younger skilled workers to take their place. On top of that, high levels of development and construction activity are causing shortages of skilled labour. Meanwhile, on the construction management side, it is becoming harder for companies to hang onto personnel as projects start to ramp up.

Exacerbating the challenge is the increased need for skill sets that are specific to in-situ extraction, such as steam plant operators, water treatment specialists, SAGD/in situ engineers and drilling coordinators. These skills are becoming harder to find in the numbers needed, and it is harder to attract such specialists to the remote oilsands regions.

According to the Petroleum Human Resources Council of Canada, the petroleum industry will need to fill approximately 9,500 jobs in the next three years, but anticipates that up to 36% of those jobs may not be filled.

Immigration policy and process limitations related to the Temporary Foreign Worker program impact the ability of employers to access international talent based on real-time business needs.

Government policy is also restrictive in some places. Even though many employers in the oilsands rely on foreign skilled workers, a new federal policy forces people who immigrate under Canada's Temporary Foreign Worker program to leave the country after only four years.

If industry, government and educational institutions can work together, they can start to solve the problem. However, companies need to think outside the box and look for new ways of doing things on a global basis. Successful companies will be those that find new ways of sourcing talent.

“Those companies with innovative solutions and an ability to effectively tap into global resources will succeed. The traditional methods of recruiting only put companies on a level playing field.”

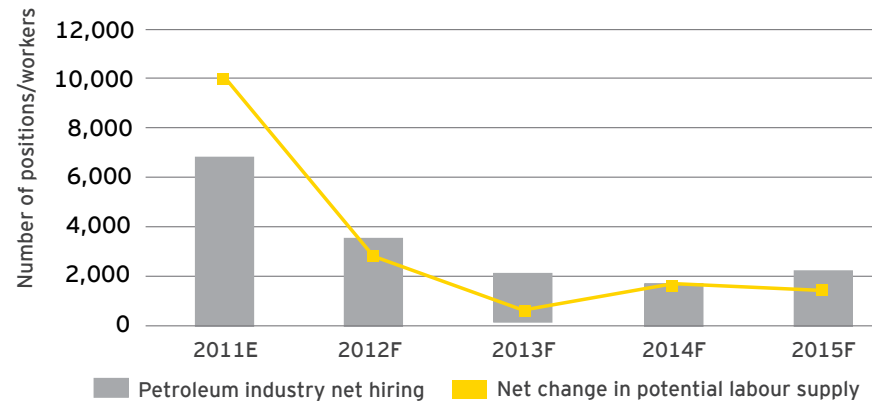
Andy Brooks

President and CEO, FT Services



Figure M

Over one-third of Canadian oil jobs may go unfilled



Source: Petroleum Human Resources Council of Canada, CAPP

Recommendation

Project sequencing

To avoid the labour supply crunches that we saw in 2007, cooperation among oilsands producers on challenges such as the sequencing of projects will be key.

Temporary foreign workers

The use of temporary foreign workers is also commonplace in the industry.

“Even today we’re experiencing shortages in certain trades ... in Canada. So we’re using a small number of temporary foreign workers,” says Flint Energy President and CEO Bill Lingard. Flint currently has about 100 temporary foreign workers out of a total of about 1,500 construction workers in the field.

Extend retirement age

Another potential way to retain experienced employees is to extend the normal retirement age. Consider offering part-time options to older individuals, and coaching roles to those

who are retired.

Apprenticeships

Alberta’s accelerated apprenticeship program now allows apprentices to become journeymen more quickly. Improving the ratio of journeymen to apprentices will improve the pool of skilled workers for future projects.

Collaboration with universities

The industry should continue to work with universities to understand their intake, shape courses, understand capacity, sponsor programs, and be present at recruitment fairs.

Offshoring of non-core activities

Some companies are now looking at not only outsourcing and offshoring back-office functions like finance and IT, but they’re also considering doing the same with elements of engineering design, especially in cases of standardized designs.



5

Environmental impact

Environmental issues continue to impact public acceptance of new projects and industry activities

Public perception is that the oilsands are a large contributor to greenhouse gas (GHG) emissions compared to other industries, but the facts do not fully reflect this. This image, however, greatly impacts Canada's global environmental reputation.

Canada contributes approximately 2% of global GHG emissions, and the oilsands account for only about 5% of that total, less than coal-fired power stations across North America (Figure N).

And since 1990, the use of new technology in the industry has supported a 39% reduction in GHG emission rates. In absolute terms, however, emissions are rising due to the overall increase in production in the oilsands.

Another major challenge in reducing GHG emissions in oilsands production is that the targets vary from the federal to the provincial level. Without clear and aligned targets, the industry has been slow to make improvements.

On average, oilsands GHG emissions are comparable to those produced in other oil sources. Most emissions are generated in the consumption, rather than the production, of petroleum.

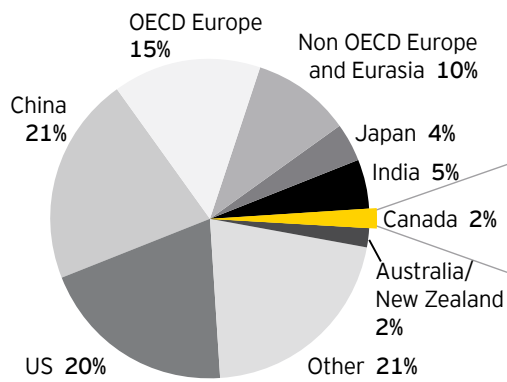
After development and production have concluded, oilsands companies are required to return the land to its original state. The proportion of reclaimed land at this point is smaller in comparison to the surface area disturbed through surface mining and tailings ponds, which suggests the industry has a long way to go (Figure O).

In cases where open-pit mines are created for bitumen mining extraction, or when in-situ well pads and related facilities are built in boreal forest areas, the land is cleared for construction.

There are concerns over the impacts of this development on vast areas of land. The total land disturbance must be put into perspective, however. A total of 4,802 km² of land could be impacted by mining, which compares to the total boreal forest area of 3.2 million km² (Figure Q).

Figure N

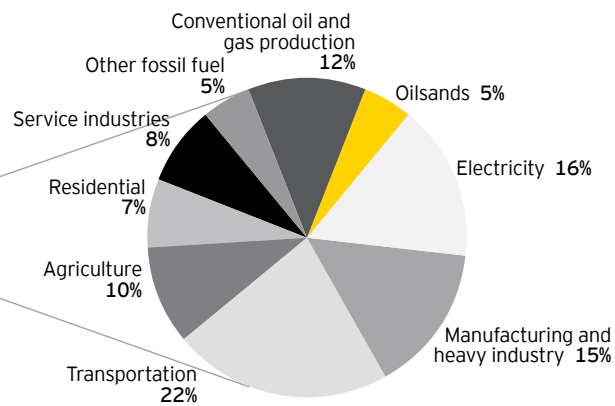
Global emissions



Source: Canadian Association of Petroleum Producers

Figure O

Canadian emissions



GHG emissions from oilsands:

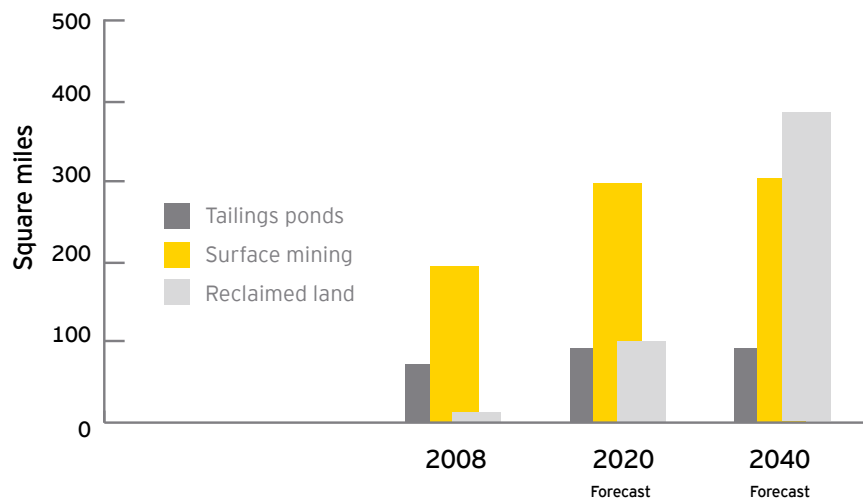
5% of Canada's GHG emissions
Less than 1/10,000 of global GHG emissions

Chart does not equal 100% due to rounding



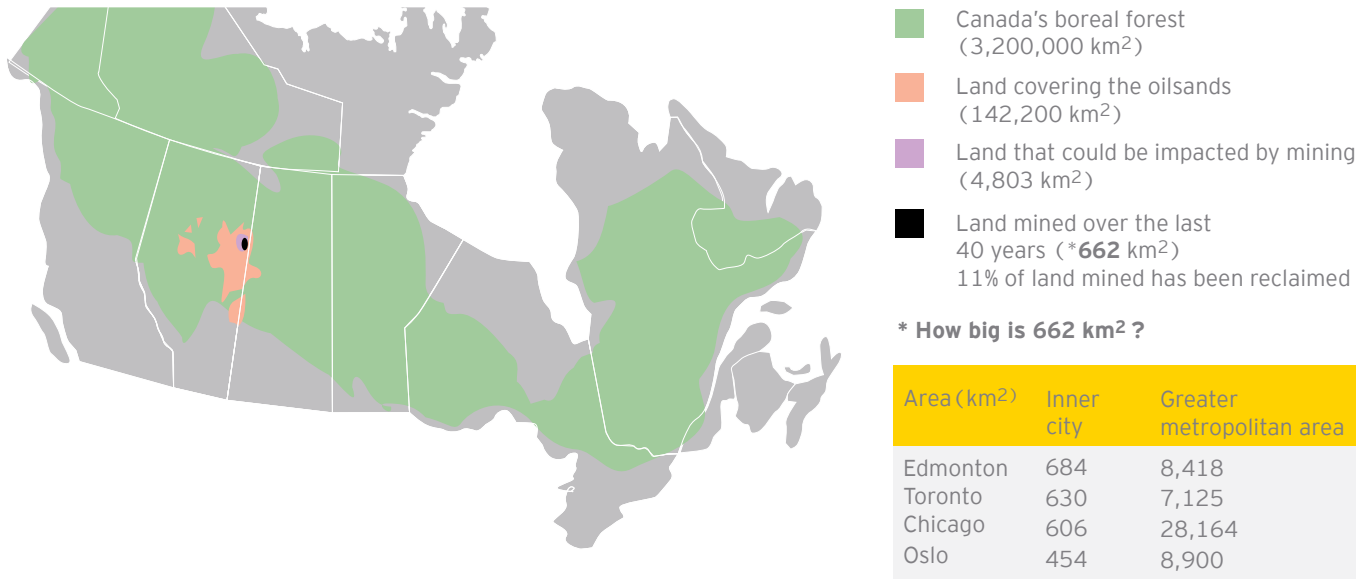
Figure P

Oilsands mining footprint and reclamation process



Source: Cambridge Energy Research Associates

Figure Q



Source: Canadian Association of Petroleum Resources

Recommendation

Measurement and reporting

Oilsands companies should think about establishing common metrics and transparency in performance monitoring and reporting, to help establish a baseline for the industry and a benchmark for improvement. Companies should organize robust and transparent data-collection and monitoring programs to help achieve their goals.

Reducing GHG emissions

Energy efficiency:

- ▶ Use less energy input
- ▶ Reduce energy waste/losses
- ▶ Capture waste heat
- ▶ Cogenerate power/steam

Improved recovery processes:

- ▶ Lower-temperature extraction
- ▶ Additives to reduce use of both liquid water and steam
- ▶ Use of electricity rather than steam
- ▶ Underground combustion rather than steam
- ▶ Carbon capture and sequestration:
 - ▶ Most effective at upgraders

Spill management plans

Federal and provincial government authorities and industry groups must work together to reduce the likelihood and severity of oil spills and leaks. This could include detailed risk assessments on high-consequence geographies, monitoring of pipelines and comprehensive disaster recovery plans should a spill occur.



6

Reputation management (new)

Oilsands reputation remains at forefront of discussion

Development of the oilsands has not been without controversy. Environmental groups and members of the public have campaigned against the oilsands, expressing concern about environmental damage of both oilsands development and pipeline infrastructure.

The most common concerns cited include the slow pace of mine reclamation, the nature and accuracy of aquatic monitoring in the region, the still insufficient progress in tailings management and the difficulty for Canada to meet its international commitments for overall GHG emissions reductions because of growing bitumen production.

To-date, only certain companies have spent time and money investing in public relations strategies. There needs to be more concerted effort by the industry as a whole in close collaboration with CAPP and others to have a fact-based discussion on oilsands.

“Public perception of the oilsands will be driven largely by both industry performance and communications. CAPP will continue to very engaged in “3E” communications - environmental performance, economic growth and energy security, all underpinned by a strong industry commitment to continuous performance improvement.”

Dave Collyer

President, Canadian Association of Petroleum Producers

| Recommendation

Managing public perception

Industry players need to make a concerted effort, in close collaboration with CAPP and others, to engage in a fact-based discussion about the oilsands. Public relations efforts should be characterized by real, effective efforts to reduce the industry's environmental impact. Direct open, transparent engagement with all stakeholders will be critical.



7

Large upfront capital investment

Companies undertaking projects with steep price tags turn to partnerships

Oilsands development is expensive – in mining operations, which involve heavy equipment, and in in-situ, where horizontal drilling is used. Input costs are also high, particularly with respect to water usage and natural gas requirements.

Production volume in the oilsands is expected to increase from 1.5 million bbl/day in 2010 to 3.3 million by 2020, and 5.4 million in 2045. The total initial capital required to achieve this production over the 35-year period is \$20 billion, excluding sustaining capital to maintain operations and production (Source: CERl). In 2012 alone, capital investment exceeded \$25 billion.

Upgrading the bitumen once it's extracted and turning it into synthetic crude requires expensive upgraders for processing. That's why many companies are choosing not to take an integrated approach to project management, keeping projects smaller to lower execution risk and leave the opportunity to consider the upgrades at a later point.

As a result of the expense required in developing upgrading capacity, the US is also looking at how refineries can be converted to process heavy crude from the oilsands. Dealing with these challenges may require new sources of foreign investment capital, including joint ventures and strategic partnerships.

“Access to substantial capital to support oilsands development and sustainment is not always the issue of late ... but rather can it be economically employed? The significant escalation in costs and resource shortages (labour, materials, equipment) driven by competitive resource demand in the Western Canadian and North American marketplace has put significant pressure on the economics of major oilsands plays. Addressing the supply side of the equation by sourcing all aspects of the supply chain globally is critical.”

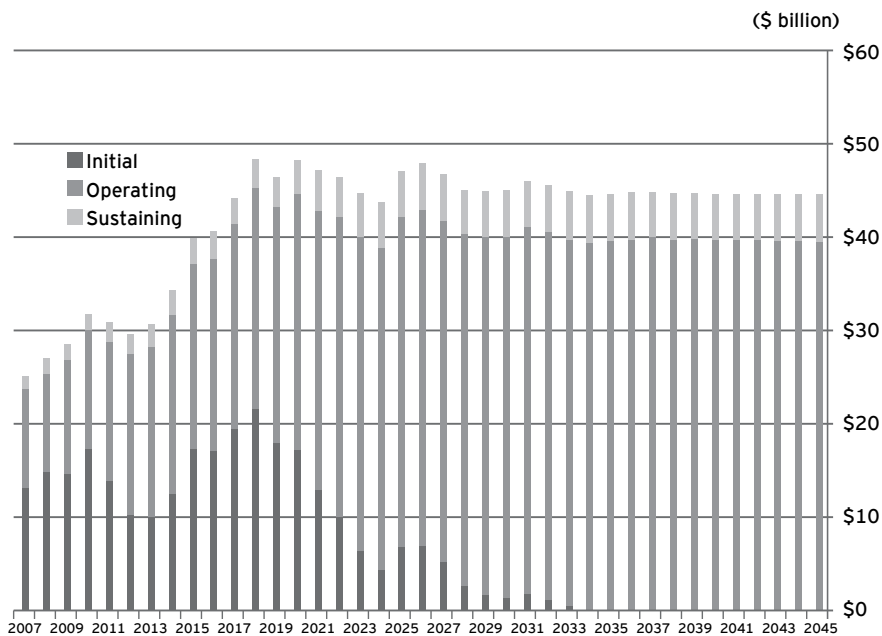
Mark Becker

*Vice President, Oil Sands Ventures,
Fort Hills, Suncor Energy*



Figure R

Capital requirements for the oilsands 2010-45



Source: CAPP, CERI

Recommendation

Collaboration with suppliers

Collaboration with suppliers through evaluation of contracting strategies, including engineering, procurement and contracting (EPC) strategies, areas of mutual technology development and innovation to drive cost improvement, should also be considered.

Industry collaboration and partnerships

To address labour availability and cost concerns, companies should identify high-volume, transactional activities that are not core to the business. Viable models may include outsourcing or co-sourcing with other industry players.



8

Changing policy and regulation

Inconsistencies between federal and provincial standards create challenges for compliance

Alberta is home to a number of fiscal, labour, environmental and export policies that impact the oilsands. While these policies continue to make Alberta a more attractive place to do business, they also create a series of new challenges for companies - challenges that can deter long-term investment.

Regulation of the industry poses significant issues for companies. There's uncertainty about regulatory administration and enforcement, compliance with regulation can be costly, and there is duplication and inconsistency in regulation.

There's also a lack of clarity around important issues, such as where the federal and provincial governments stand on royalties and regulations, and items such as environmental performance management metrics and targets.

Regulatory delays and related costs can have severe consequences. In some cases proposed projects can be delayed for such a period of time that the market and industry find other solutions, making the original project no longer viable.

| Recommendation

Regulatory efficiency reforms

Look for opportunities to ensure that the right regulatory steps are executed, but in a more efficient way, including:

- ▶ Limit the number of registered interveners that need to be heard
- ▶ Provide time limits on how long the National Energy Board (NEB) review panel has to take decisions
- ▶ Support discussions between oil and gas companies and First Nations well ahead of applications filing with the NEB, Energy Resources Conservation Board (ERCB) and other government agencies
- ▶ Streamline approvals between the federal and provincial governments when both levels of approval are required
- ▶ Combine hearings conducted by the NEB when more than one similar project is occurring within the same timeframe

9

High demand for water

Companies hesitant to invest in technology face obstacles to reduce water usage levels

Oilsands extraction requires a lot more water than conventional oil, mainly due to the viscous nature of the bitumen and the intensive process required to produce synthetic crude.

For mining, the oilsands currently use only 0.5% of the annual flow of the Athabasca River. In comparison, this is one-third of the amount that the City of Toronto uses in a year.

Withdrawals are restricted during low-flow periods, when companies use on-site water storage, and about 80% to 90% of the water the industry uses is recycled. According to the Royal Society's 2010 report, there is no impact on the water quality or ecosystem of the Athabasca, and no evidence of impact on human health in downstream communities.

With in-situ drillable oilsands production, companies use non-potable (saline) water from sub-surface aquifers. No water from the Athabasca River is used. About 90% to 95% of the water is recycled, and most new projects are using 100% saline for steam.

Tailings ponds remain a challenge. A mixture of water, clay, sands and residual bitumen used to settle solids and recycle water, tailings ponds have generated unfavourable press in recent years because of their impact on local wildlife.

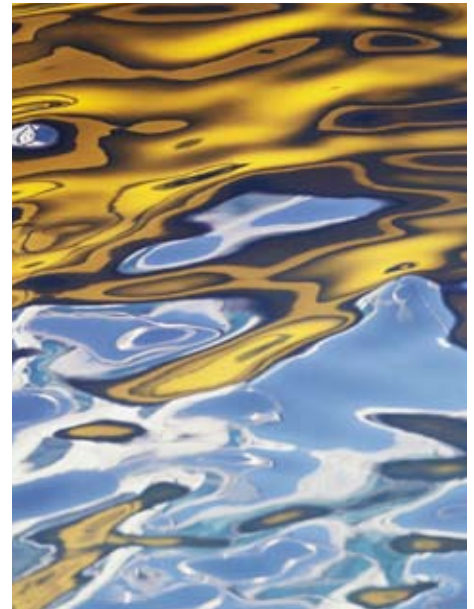
The ponds use approximately 80% recycled water, and the industry is making considerable investments and research to increase recycling and reduce pond size.

The degree of industry collaboration is improving rapidly, but so are the expectations of all stakeholders. Companies that hesitate to adopt technologies that improve environmental footprints, in particular, face challenges. New technologies make it possible for companies to reduce their water usage levels.

"Water use in the industry has evolved considerably over the past decades. While use of potable water was frequent in the past, it has been reduced considerably in recent decades as companies look to use recycling and other water conservation techniques."

John Zahary

*President and CEO,
Sunshine Oilsands Ltd.*



| Recommendation

Investing in innovation

Continued investment and innovation as it relates to water usage is key. Striking the right balance in terms of collaboration with other companies without compromising competitive advantage will enable new innovations to thrive throughout the industry.



10

First Nations relations (new)

External and internal stakeholders a direct determinant of success

Many of the oilsands deposits sit on or near lands that have been traditionally used by Canada's First Nations peoples, who traditionally have a strong connection to the land and environment. This creates challenges for oilsands companies, which need to ensure they have the social licence to operate in these regions.

Canada's federal and provincial governments do not have a clear regulatory process specifically designed to address oilsands activities on lands traditionally used by First Nations communities. The expectation is that First Nations rights will be resolved through consultation and agreements related to development.

These negotiated agreements are often complex and cover issues such as:

- ▶ Local benefits
- ▶ Compensation for land use
- ▶ Development of local skills and capacity
- ▶ Mitigation of the social impact of oilsands projects

"To be successful, we have to recognize stakeholders and have an alignment of interests to show people what's in it for them."

Terrance Kutryk
*President and CEO,
Alliance Pipelines*

|Recommendation

Aboriginal consultation

Continued stakeholder management and consultation throughout the development and operational lifecycle is crucial to ongoing success in terms of social performance.

Provincial government infrastructure planning

Companies must collaborate closely with government on infrastructure planning and development. Planning should focus on reducing pressure on local infrastructure, quality of life, working with government so that there is more timely investment in infrastructure and community services.



Looking ahead

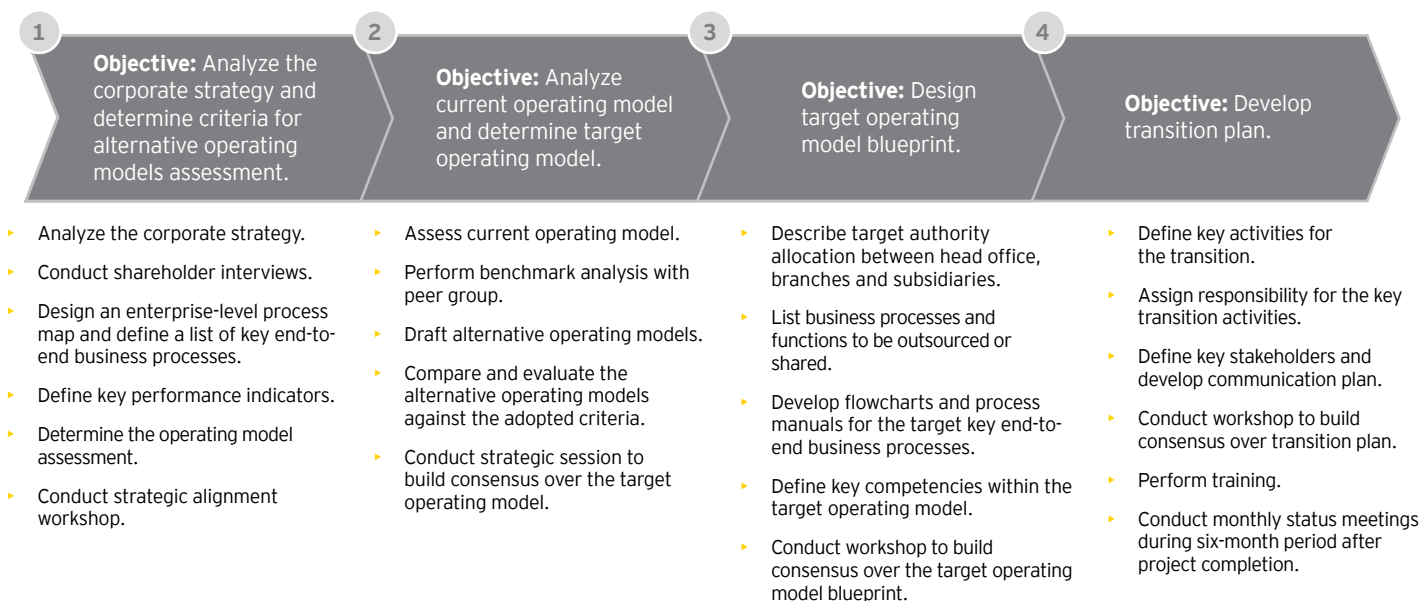
Canada’s oilsands will continue to play a critical role in world supply and energy demand. The challenge – and opportunity – companies operating in the oilsands face is to realize the great potential of resources while managing risks associated with cost and environmental impact to secure adequate returns on investment. Understanding your company’s risk profile and risk appetite are the first steps to seizing this year’s market opportunities.

How we can help

Operating model

Ernst & Young provides support in implementing and designing an appropriate operating model strategy that aligns with your business. This involves analyzing the strategy and specifications of the criteria for your model assessment, looking at your current business model before developing and designing the target model and helping you with your transition plan.

Our approach





Enterprise cost reduction

Our enterprise cost reduction methodology and approach are underpinned by an extensive set of tools and accelerators that we use on all comparable engagements. We go beyond theory and analysis to focus on results-oriented execution to deliver measurable benefits to your business.

Phase 1 – Identify potential opportunities

Define high-level business plan, agree on the baseline, and identify immediate risks and opportunities.

Phase 2 – Prioritize opportunities

Benchmark findings, perform deep dives around select opportunities, formulate a benefit delivery plan, and evaluate savings.

Phase 3 – Solution design

Define the detailed design, agreeing the implementation plan for each solution.

Phase 4 – Implement design

Begin delivery of short-term initiatives and begin planning on long-term initiatives. Monitor and manage initiatives and intervene as appropriate.

Phase 5 – Execute transition

Finalize transition approach and execute the transition, help embed the changes into the business and review cultural and performance management initiatives.

Our cost-reduction methods



People and organizational change

1. HR transformation - We provide strategy development, service delivery model development and implementation, process re-engineering, business process outsourcing, and support in HR information system selection.

2. Talent and performance management - We provide performance management strategy, plan and implementation, succession planning and management, role and competency design, and leadership development.

3. Enabling change - We provide change strategies and plans; leadership alignment, development and engagement,

change readiness assessments, stakeholder alignment and engagement, communication strategies and plans, and training and development.

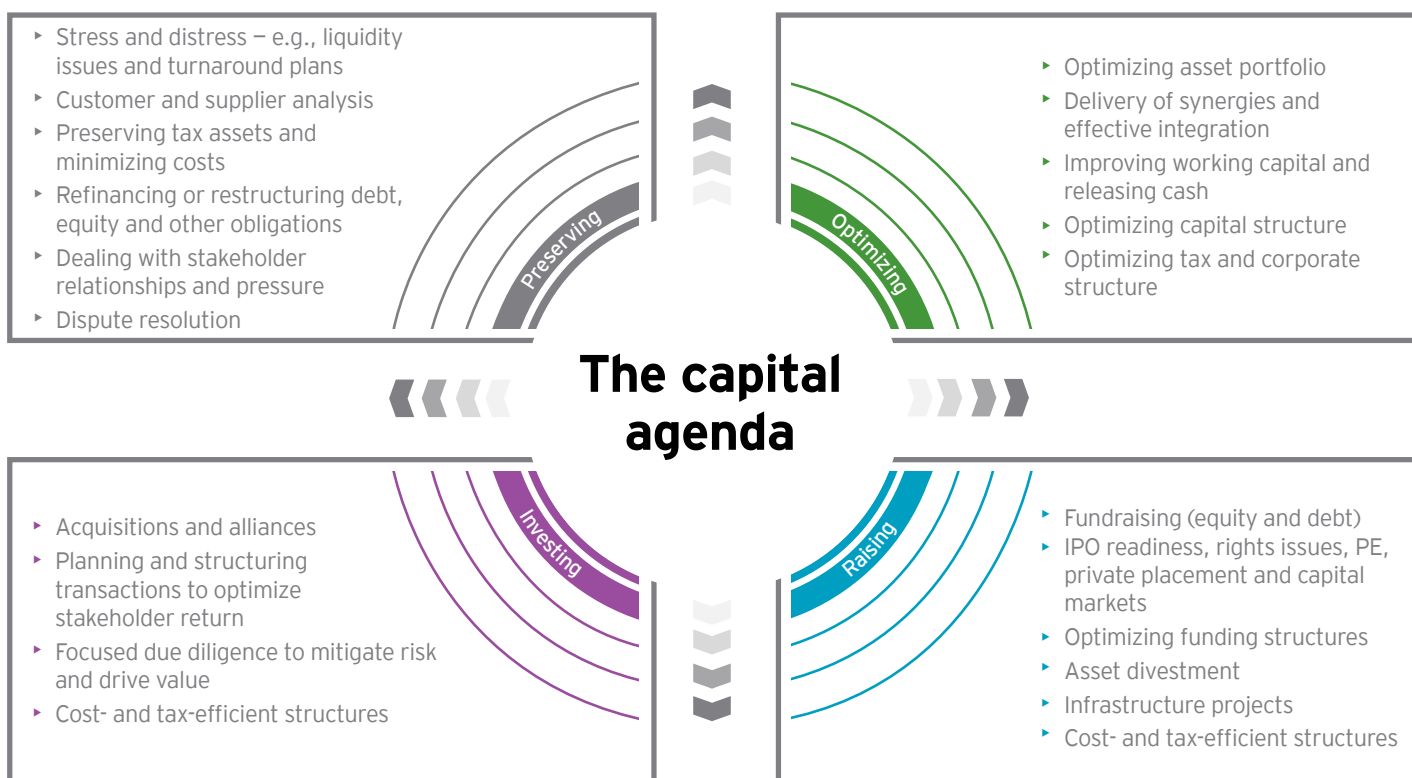
4. Organizational effectiveness - We provide services that enable companies to better execute their strategies and achieve desired results, including organizational development and design, competency development and role mapping, organizational cultural assessment, workshop design and facilitation, and process improvement and re-engineering.



The capital agenda

Leading companies are adopting a range of practices across four key areas of the capital agenda to build competitive advantage. Our Transaction Advisory Services team can help you make better and more informed decisions about how you strategically manage capital and transactions in a changing world. Whether you're preserving, optimizing, raising or investing capital, our team can bring the right skills, insights and experience to your organization.

The diagram below shows some of the ways we can support your capital agenda.





Climate Change and Sustainability Services

We can work with you to develop global systems of controls to identify, mitigate and monitor material risks of non-compliance with business principles as it relates to sustainability. This type of work is designed to help support an improvement in contractor performance in relation to non-financial risk.

We provide advice on the implications of climate change for your organization by identifying the potential issues and which aspects of your business may be affected. We can:

- ▶ Make recommendations on the development of an effective climate change strategy and the processes and controls required to implement it
- ▶ Review the adequacy of climate change plans and the mechanisms used to track the benefits
- ▶ Provide guidance on developing compelling and credible external communications on climate change that you can rely on
- ▶ Help prepare your company for regulatory requirements



Learn more

To find out how our Calgary Oil & Gas team can help your organization through its journey to growth and high performance, please visit ey.com/ca/oilandgas or contact:

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The oil and gas industry is constantly changing. Increasing regulatory pressures, price fluctuations and geopolitical complexities all present significant challenges. Our Global Oil & Gas Center brings together a worldwide team of professionals to help you achieve your potential – a team with deep technical experience providing assurance, tax, transaction and advisory services. The Center works to anticipate market trends, identify the implications and develop points of view on relevant industry issues. Ultimately, it enables us to help you meet your goals and compete more effectively. It's how Ernst & Young makes a difference.

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