

The Impact of Canada's Oil Sands

1. Why I'm here

- I'm Marcel Coutu, CEO of Canadian Oil Sands and Chairman of Syncrude, one of Canada's largest and oldest oil sands operations.
- I'm traveling across the country, talking to Canadians about the oil sands because of the national importance of this resource to all of us.
- The development of Canada's oil sands has implications for our energy security, our economy and quality of life, and the environment.
- An industry of our size and scope cannot operate without having some impact on the environment.
- I am aware that Canadians are very concerned about protecting the environment, and ensuring we have clean water, fresh air and natural landscapes for future generations.
- So, much of my discussion will focus on how oil sands operations impact the environment, and what we are doing to reduce that impact.
- We're not perfect but we are committed to continually doing better and we are very open to suggestions on how we can further improve.
- I'm not just here to talk -- I want to hear your opinions and concerns. And I'm ready to carry messages back to Ottawa, Calgary and Fort McMurray!
- I'm going to begin by providing an overview of the oil sands, and then tell you about the economic impact they have on Canada, right here in Nova Scotia, and perhaps on your business (you).

2. Oil Sands 101

- Oil sand is composed of sand, mineral-rich clays, water and bitumen.
 - Bitumen is a thick (we say “heavy”) oil with the consistency of peanut butter
 - At Syncrude, we upgrade bitumen into a light, sweet crude oil
 - Canada’s oil sands are estimated to contain 1.7 trillion barrels of bitumen, with more than 170 billion barrels that can be recovered today using existing technology, which makes Canada the second largest oil resource country in the world. That is by far the biggest future source of oil accessible to the free market and six times larger than the conventional oil reserves of Canada and the U.S combined.
- We develop the oil sands in two ways:
 - Large-scale mining and processing operations, like Syncrude, represent about 20% of total oil sands potential.
 - About 80% of the resource is too deep to mine and needs to be recovered through what is known as *in situ* operations, which is similar to conventional oil development because it involves drilling wells. A first well injects heat, usually steam, into the reservoir and a second parallel well pumps the liquefied bitumen to the surface.
- **Slide:** While I’m sure many of you have seen elements of mining operations before, I thought I’d begin with a short video clip from Energy Tomorrow as an overview of the Syncrude mining operation. ***Play 3:07 video clip.***
- ***Truck and shovel shot.*** Syncrude is a large scale mining operation where we remove the overlying soil and mine the oil-bearing sand with large electric shovels and trucks. The evolution of our industry and this truck & shovel operation is an innovation story of its own.
- Commercial oil sand is generally 7% or more bitumen saturated, along with water, clay and minerals, including sand of course.
- Once we separate the oil from the sand, we’re left with bitumen that looks like this. ***Cut to shot of liquid bitumen***
- It’s not yet eady yet to put into the gas tank of your car or to fuel an airplane, so we have to pipe it to a plant called an upgrader, where it’s treated and turned into light, synthetic oil.
- This we sell into several markets, much of it piped into the U.S. as feedstock for their refineries, where it is turned into gasoline, diesel, jet fuel, and other products.

3. Rumours of our demise have been greatly exaggerated

- Now I'm sure you've seen in the media that things really slowed down in the oil sands when the economic downturn hit in 2008. The oil sands are a higher cost, more capital-intensive source of crude oil than conventional sources. The offsetting benefit, of course, is the very low exploration risk and the extremely long-life nature of the resource. For example, at current design capacity, Syncrude could produce for close to 100 years.
- Obviously margins are squeezed when the price of oil drops from almost \$150 a barrel to below \$40. The option of simply shutting in an oil sands facility is not very practical, so all existing oil sands operations have continued without interruption.
- Many new projects that were in the development phase, however, were delayed.
- To paraphrase Mark Twain, "rumours of our demise have been greatly exaggerated".
- Now, in more recent months, quite a number of expansions and new projects have been re-sanctioned, such as Imperial Oil's Kearl project and Suncor's Firebag expansion.
- At Syncrude, we are in the preliminary design phases for two future stages of growth to boost production from our current capacity of 350,000 barrels per day.
- So, as you can see, our industry remains very optimistic about the future, and where the tightening supply and price of oil is going. Ours in an industry that requires long term vision and high-risk investment; while short term fluctuations in the price of oil do affect our profitability, they do not deter us from pursuing our plan to provide a nationally secure and environmentally responsible source of oil for many decades to come.

4. The economic impact of Canada's oil sands

- There is little question that the oil sands have been and will continue to be one of the main drivers of the Canadian economy, and by no means just in Alberta.
- **Slide:** Since start-up in 1978, Syncrude has paid governments more than \$10 billion in royalties, taxes and other charges. In 2008 alone, we spent \$2.4 billion.
- Due to the multiplier effect, every dollar invested in the oil sands creates about \$8 in economic activity, mostly in Canada.
- We have about 5,500 employees plus another 1,500 contractors working at our Syncrude facility. We're also one of the largest employers of Aboriginals in Canada.
- The oil sands are the largest job generator in Canada, affecting the jobs of more than 112,000 people across the country.
- **Slide:** According to a study released by the Canadian Energy Research Institute (CERI) this past July, over the next 25 years the oil sands will have an economic impact of over \$1.7 trillion on Canada's Gross Domestic Product (GDP) – that's \$68 billion every year for the next 25 years! To put this in context, Canada's entire GDP in 2008 was about \$1.3 trillion.
- They also predict the oil sands will create over 500,000 jobs per year on average over 25 years.
- While it is true Alberta will benefit with the lion's share, you'll be surprised to learn what CERI projects for Nova Scotia; you're expected to receive an economic impact of over \$3.25 billion, generating over 63,000 person years of employment over the 25 years; that's over 2,500 jobs a year on average over those 25 years.
- Don Thompson, head of the Oil Sands Developers Group, tells of meeting a Halifax manufacturer of garden tools... he says his highest sales come from a big Fort McMurray store... so when Fort McMurray is growing, Halifax benefits.
- So now you're asking yourself "how can I get my share of that?"

5. Opportunities in Nova Scotia

- As I mentioned, Canada's oil sands represent the world's second largest oil reserves and produce half of Canada's oil. Due to the size and scope of the oil sands sector, it's not a stretch to say we source materials and people from all over the world.
- The major oil sands projects, like the major projects in Atlantic Canada, tend to be administered through large EPCM contracts that bring together experts and suppliers from many companies in many regions. An illustration is CNRL's Horizon Project,

that employed workers and acquired expertise and materials from across Canada. In Atlantic Canada alone, CNRL awarded four contracts worth about \$150 million in New Brunswick, eight contracts worth \$2.2 million in Nova Scotia and 21 contracts worth more than \$275 million to Newfoundland companies.

- On the people side, the Maritime influence on Fort McMurray is well known, but I couldn't even guess how many families receive income from our industry. It's equally difficult to quantify the economic impact on the service and materials side.
- However, I've already told you that everyone in the room is an oil sands owner. So every barrel of oil we produce at Syncrude pays into the Alberta and federal treasuries, and last year Alberta sent about \$21 billion net to Ottawa in transfer payments which benefited all Canadians.
- How many people here know someone who has worked for or provided services to the oil and gas industry in Western Canada? I would hazard that virtually every company working in eastern Canada's onshore or offshore oil and gas business is either an oil sands participant or has benefited from the R&D, technological advances and ripple effect of the capital investment in Canada's oil sands.
- While I don't have a complete membership list at hand, I have met people from your Board today whose companies are well known in Calgary and Edmonton – Chairman Mark Healy's firm provides EPMC services in Alberta, Jacques Whitford, now part of Stantec, is a highly regarded environmental consultant in Alberta, David Aplin does significant recruiting into Alberta, Kuehne & Nagel has busy offices providing shipping logistics services in Calgary and Edmonton, and Dalhousie University is a key educational partner of Syncrude's. Frankly, I suspect you have a better sense than me of how you participate in developing Canada's oil sands – and why you should be doing more.
- Your website says OTANS' mandate is to support the maximization of Atlantic Canadian participation in the supply of both goods and services to the offshore/onshore oil and gas industry. That includes identifying items sourced from abroad that came through or from this region. OTANS also has an advocacy role, and that includes ensuring that policies – be they fiscal, environmental or dealing with training and workplace safety – be consistent and beneficial to all Canadians.

6. Canada's oil supply - today and tomorrow

- **Slide:** Canada's oil sands produce about 1.3 million barrels TODAY, about 50% of our country's total oil production. This will be a bigger percentage in the future because of the irreversible decline of conventional sources of light oil.
- 97% of Canada's future known sources of oil are locked within the oil sands.
- The oil sands industry is shared by all Canadians; they are a national treasure and companies like Syncrude are the operators that produce that resource on behalf of all Canadians – not just Albertans or a small group of oil & gas executives.
- So ask yourself: where would you like your oil to come from, the people sitting next to you, who are in fact my landlords, or from foreign sources some of

whom may not be aligned with Canadians on such important issues as environmental stewardship, technological excellence, or human rights?

- Every Canadian, through their elected governments, has a say in how Canada's oil sands resource is developed. Consequently, it is your responsibility to learn the truth about how we can go forward together to secure this crucial long-term supply in a responsible manner. The lifestyle we enjoy today will be modified by the decisions we and international forces make regarding global energy supply, energy investment and – most of all – energy consumption. The oil sands are an asset for all of us.

7. ENVIRONMENTAL STEWARDSHIP: How we're moving the ball

- Don't believe those who say Canada's oil sands are one of the world's biggest sources of pollution. They are trying to scare you while, frankly, what they are really doing is fundraising.
- Let me set the record straight by saying Syncrude and our peers have demonstrated you can be a profitable oil sands operator and still be socially and environmentally responsible. We work every day to balance what we call "the 3 Es": Energy Supply, Environmental Stewardship and Economic Contribution.
- We have constantly moved the ball forward on environmental performance and will continue to do so because, like you, we want to preserve our natural landscapes, and have the clean air and water we all need to survive.

8A LAND: THE FOOTPRINT

- First, let's talk about land, and specifically surface disturbance and the boreal forest. Some pundits claim we're mining an area the size of Florida. *This is utter nonsense.*
- **Map slide:** This map shows Canada's boreal forest, covering some 3 million square kilometers – from the Alaska border to the Atlantic, it's an important part of the global ecosystem.
- The purple on the map shows the size of the oil sands deposits – about 140,000 square kilometers which can't be mined because the oil sand is too deep. In fact, until about ten years ago, we didn't think we could ever produce that oil economically.
- The yellow shows the part that is mineable – about 4,800 square kilometers, or about 0.2% of Canada's Boreal Forests.
- **Second Map:** Of that, only about 500 square kilometers are being mined today; that's about 10% of the size of the Halifax Regional Municipality.
- If Canada's forests are under threat, it is not from Canada's oil sands operations.

8B LAND: RECLAMATION

- **Slide:** Our operations are big industrial sites; early recruitment ads for Syncrude bragged that we'd moved more earth than the Panama Canal.
- It takes many years and millions of dollars to return land to its natural state after mining operations, and the sheer scope of our mines means a big footprint for many years;
- However, reclamation is as much a part of our operations as is mining for oil, and our licenses include details of how we must reclaim.
- We are constantly seeking new ways to mitigate our impact on the land, and we strive to maintain the integrity of regional ecosystems and biodiversity
- Since we began mining over 30 years ago, Syncrude has reclaimed 22% of the land disturbed, including the planting of 5 million trees, to create self-sustaining landscapes.
- Syncrude invests \$100 million in land reclamation every year.
- This parcel of land used to be a Syncrude overburden dump for a former mine; today it is one of our most mature reclaimed areas.
- **Herd of Bison slide:** This is a herd of around 300 Wood bison thriving on reclaimed land, co-managed with the Fort McKay First Nation.

8C AIR

- **Slide:** Let me start by talking about GHG emissions, perhaps the highest profile global environmental issue today.
- Let me state clearly that we know that our carbon emissions are significant, but equally clearly that we have made huge strides and will do much more to reduce our emissions.
- The oil sands account for about 5% of Canada's GHG emissions or about 1/1000th of global GHG emissions.
- I am sure you all know examples of announcements of a new warehouse or manufacturing facility opening near this community. These ventures mean jobs, ranging from the people who actually work at the facility to people contracted to construct clean and maintain it; they mean local spending for materials, but also by the people who work at the facility. In short, they mean activity where there wasn't activity before. But something else is new: the building's heating system and perhaps assembly lines produce carbon. The staff produces carbon going to and from work, etc. etc. So what is clearly good news in a community also unfortunately increases the carbon footprint. Little happens without energy consumption!
- That's a problem we face in the oil sands. We're growing employment, economic activity and wealth. But because our industry is growing, the total amount of GHG emissions is growing. Our challenge, which we've accepted and which we are winning, is to grow the positives – production plus jobs – while significantly reducing GHG emissions related to each incremental barrel produced. The experts call this “reducing carbon intensity” but I call it “growing better.”
- Our industry is committed to growing better. We intend to reduce GHG

emissions per barrel of production by improving energy efficiency and by developing new technologies. Since 1990 our industry has dramatically reduced emissions by about 33% per barrel, so we are demonstrating we can do it.

- **Slide:** In addition to reducing GHG emissions, we are committed to protecting air quality. We will design and operate our facilities to ensure that regional air quality continues to exceed provincial air quality objectives. Air quality in the oil sands region is carefully monitored and consistently tests as good or better than the air in all of Canada's major cities.
- As an example, at Syncrude we are investing \$1.6 billion to reduce sulphur dioxide emissions by 60%. This investment does not add a single barrel of oil to our production, but it does demonstrate we are serious about our role in reducing emissions.
- **CAPP slide on GHG footprint across North America:** This demonstrates why the oil sands cannot be singled out as the only solution to GHG management. As you can see, the biggest problem, represented by the red circles, is coal-fired power plants in the U.S., followed by the same kind of coal plants in Canada.
- Keep in mind this map only shows the GHG emissions from power plants and the oil sands; about 80% of total emissions come from consumption of energy created by all of us as we drive our cars, fly on planes and heat our homes.

8D WATER

- **Athabasca River:** This is the beautiful Athabasca River in Northern Alberta; like you, I don't want to see this river or any other damaged, leaving a poor legacy for future generations.
- **Close up of river:** The Athabasca has cut through oil sands deposits for centuries; natives used the bitumen to waterproof their canoes. There is oil in the Athabasca, and it's there naturally.
- All existing and approved oil sands projects will withdraw less than 3% of the average flow of the Athabasca River. During winter, withdrawals are restricted to 5% of these low flow periods. The Athabasca River is one of the least utilized river basins in Alberta.
- Syncrude does not return any of our process water back into the Athabasca; it is all recycled; in fact 88% of the water we use is recycled.
- The source of that recycled water is our tailings ponds. Syncrude's tailings ponds are constructed as dams with strict government regulations and monitoring. Integral to the design of our tailings ponds are a series of interceptor ditches and sumps to ensure any seepage or run-off water from rain or snow is collected and pumped back into the pond. We also monitor ground water movement with a thorough ground water monitoring program.
- The Regional Aquatic Monitoring Program (RAMP) is a multi-stakeholder environmental monitoring program that conducts studies upstream and downstream of the oil sands region. They have not detected any measurable impacts to the Athabasca River ecosystem.
- In addition, Alberta Environment has been monitoring water use and water

quality in the oil sands regions since the early 1970s. Again, they have not detected any impact from oil sands operations on water or sediment quality.

8E ENVIRONMENTAL STEWARDSHIP: CONCLUSIONS

- **Slide:** Our goal is to keep moving ahead with new technologies that further reduce the impact our operations have on the environment, be it water, land or air.
- Syncrude is one of Canada's largest R&D companies, investing about \$50 million a year in seeking new and better ways to operate.
- On a personal note let me say that as concerns about the environment rise and worries about having a secure supply of oil for the future increase, a big part of the answer will be **energy conservation.**
- Our modern lifestyles use far more energy than my parents dreamed possible and by far the most carbon dioxide emissions come from our personal consumption, not the production of oil, natural gas, and coal; if we all do our part to conserve energy in our lives, we can participate in the reduction of CO2 emissions. It is, after all, a shared responsibility that won't be solved with finger pointing.

8. WRAP UP: Thank you and let's talk

- We know that a global shift to renewable and alternative energy, including wind, solar, geothermal and many others, is underway. I embrace this shift, but recognize that it will take time, and a great deal of investment. Today fossil fuels, including oil, gas and coal, supply about 88% of our energy.
- **Slide of bridge:** To get from where we are today to where we want to be tomorrow requires a time bridge, which the oil sands can provide.
- Canada's oil sands are truly a national treasure; they will provide a secure supply of oil to support our quality of life for many generations, while providing jobs and economic prosperity across our great nation.
- **Closing slide:** Thank you for your time and attention. I didn't just come here to talk, so I'd like to hear your thoughts, and would be happy to try to answer your questions.

Q & A: questions from audience