



Summary Report

Greening the Oil Sands

*Debunking the Myths and
Confronting the Realities*

*June 22, 2010
Four Seasons Hotel
Washington, DC*

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Canada 2020 is a non-partisan, progressive centre working to create an environment of social and economic prosperity for Canada and all Canadians.

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Agenda

- 7:30 am Continental Breakfast
- 8:00 am Introduction and Welcome: Canadian Ambassador to the US, Gary Doer
Remarks: James Rajotte, MP, Edmonton-Leduc, Chairman, House Finance Committee
Remarks: John Abbott, Executive VP, Heavy Oil, Shell Canada Ltd.
- 8:30 am **How can science contribute to reducing the environmental impact of oil sands development? What clean technologies are being deployed?**
- Reducing the oil sands' environmental foot print is, at its heart, a scientific and technological issue. What technologies show the greatest promise in this regard? How can they be brought on line faster and for less?*
- Moderator: Don Newman, Canada 2020/CBC
Panellists: Dr. David Lynch, Dean of Engineering, University of Alberta
Scott Nelson, President & CEO, Titanium Corporation
Gordon Lambert, VP, Sustainability, Suncor Energy
- 9:30 am Introduction: Ambassador Gordon Giffin, Partner, McKenna Long & Aldridge
- Remarks: John Podesta, CEO, Center for American Progress
Q&A to follow**
- 10:30am **Panel 2 – The Big Picture –Public Opinion, Politics, Policy**
- The energy sector in general, and the oil sands specifically, are an important part of North America's future economic prosperity. With the second largest reserves in the world, Canadian oil and gas supply is a vital part of the US energy mix. How can we make the oil sands more accepted part of that mix?*
- Moderator: Don Newman, Canada 2020/CBC
Panellists Janet Peace, VP, Markets and Business Strategy, Pew Centre on Global Climate Change
Bruce Anderson, Senior Consulting Associate, Harris Decima
Greg Stringham, VP, Markets and Oil Sands, Canadian Association of Petroleum Producers
Samantha Gross, IHS Cambridge Energy Research Associates Director
- 11:30 am Closing Remarks – John Abbott, Executive VP, Heavy Oil, Shell Canada

Overview

Following on the heels of Canada 2020's successful "Greening the Oil Sands: Canadian Science and Clean Tech Leads the Way" Symposium held in Ottawa on April 29, Canada 2020, in partnership with the Canadian American Business Council and the United States Energy Association, hosted a similar event on June 22 in Washington, DC. With over 150 participants from the US and Canada, including three former US ambassadors to Canada and numerous officials from various departments of the United States Government, this half-day symposium was rich in perspectives on science and research, technological application, and the public policy/political dimensions of the oil sands.

Introduction and Welcome – Ambassador Gary Doer

The day began with an introduction from **Canada's Ambassador to the United States, H.E. Gary Doer**. The Ambassador congratulated President Obama for his leadership at the Copenhagen climate change summit and pointed out that Canada is firmly committed to the same target as the US – a 17% green house gas emissions (GhG) reduction by 2020 over 2005 levels. The Ambassador indicated that this target would be achieved, in part, through harmonized measures and policies with the US, such as vehicle emissions standards.

Ambassador Doer pointed out that coal represents 60 times more emissions in the US than the oil sands. Hence, he called for a realistic, scientific-based dialogue – based on both security of supply and environmental sustainability goals – rather than what he called a "holier than thou" approach which will lead nowhere.



H.E. Gary Doer

Remarks by James Rajotte, MP, Edmonton-Leduc, and Chairman, House Finance Committee

James Rajotte, MP, Edmonton-Leduc, and Chairman, House Finance Committee, argued that the oil sands should be viewed as a strategic resource by both Canada and the United States. The oil sands could be the biggest oil reserve in the world and countries are increasingly turning to heavier oil sources, according to Mr. Rajotte.

He stated that oil sands account for five percent of Canada's GhG emissions and, between 1990 and 2007, those emissions have been reduced by 38% per barrel of oil produced. Mr. Rajotte argued that the relevant measure should be life-cycle carbon emissions and on that score the oil sands are 5-15% higher than other sources of oil (others challenged this number).

Mr. Rajotte pointed out that oil sands development has always been driven by technology, and that governments and industry continue to invest heavily in new innovative technologies to further improve oil sands production efficiency and reduce its environmental impact. Ottawa and the governments of Alberta and Saskatchewan, for example, are investing some \$3 billion in carbon capture and storage (CCS).

Finally, on the subject of tailings ponds, Rajotte pointed out that 67 square km of land are now being reclaimed, with a goal of reclaiming all land, while at the same time technologies are being developed to further reduce tailings, for example, in moving to dry tailings.



James Rajotte, MP, Chairman of the House of Commons Finance Committee

Remarks: John Abbott, EVP, Heavy Oil, Shell Canada

John Abbott, Executive Vice President, from Shell Canada Ltd., cited numerous facts and statistics to put the oil sands development in a factual context.

In 2009, for example, oil demand suffered its largest decline since 1982; gas demand also declined in Europe and North America last year; energy demand is projected to grow significantly and supplies of easily accessible oil and gas will be insufficient to meet the demand. Today, Shell is producing 25,000 barrels per day from the oil sands and has some 200 dedicated staff all focused on oil sands R&D. Mr. Abbott stated that “minable” oil sands cover less than 5,000 square kilometres or 1.1% of Canada’s boreal forest, and only 600 square kilometres of this has been mined. The oil sands represent about 23% of Alberta’s GhG emissions and the industry recognizes that this must be improved. As such, industry is exploring less GhG intensive energy sources to support oil sands production, including wind and nuclear.

Mr. Abbott claimed the oil sands will have an important role in the energy supply chain for the foreseeable future and that Canada is one of the few countries in the world with the potential to grow oil production.



John Abbott, Shell Canada Ltd.

Abbott believes carbon capture and storage is a proven technology that permanently stores CO₂, and he pointed out that Shell is investing in carbon capture and sequestration (CCS) in partnership with the federal and Alberta governments. On the subject of land use and reclamation, Abbott pointed out that industry is legally required to reclaim all land, and that First Nations elders have been working with Shell on land reclamation strategies that will better meet social, environmental, spiritual uses of oil sands land.

He also discussed the importance of better managing tailings to reduce the need for fresh water from the Athabaska River. Industry and government are both focused on how to reduce tailings and water use. He pointed out that Canada has one of the most stringent regulations in the world for water withdrawal.

Panel 1 – How can science contribute to reducing the environmental impact of oil sands development? What clean technologies are being deployed?

This panel featured a leading oil sands researcher, the CEO of a clean-technology company focused on oil sands waste mitigation, and a sustainability executive from one of the largest oil sands companies. The purpose of the panel was to explore the research, technology development and technology deployment dimensions of the oil sands and the nexus among the three.

Dr. David Lynch, Dean of Engineering at the University of Alberta, suggested that the oil sands could supply all US oil needs for 25-35 years given the resource's estimated 315 billion recoverable barrels. The major focus of oil sands research today, according to Dr. Lynch, is on recycling water, with a goal of zero liquid discharge. In the early days of oil sands production, ten barrels of water were required to produce one barrel of oil. That has been reduced to two barrels, due largely to the recycling of water through tailings ponds. Today, five percent of water use in Alberta is by oil sands, according to Dr. Lynch. He pointed out that governments, universities and industry are investing in many technologies to further stabilize and reduce tailings ponds. The first tailings pond will be reclaimed by end of 2010.

Dr. Lynch emphasized the collaborations among industry, government and universities on oil sands research. Over 60 faculty members at University of Alberta are working on industry-government-university projects, with a total of over 700 people, including graduate students, involved in oil sands research at the University of Alberta.



Scott Nelson, Gordon Lambert, Dr. David Lynch, and Don Newman

Scott Nelson, President and CEO, Titanium Corporation, explained how his company is applying new clean-technologies to “create value from waste” during the oil sands production process. Titanium Corp is supported by the government of Alberta, Sustainable Development Technologies Canada and various oil sands companies.

In a nutshell, Titanium’s technology recovers solvents, water, Zircon, bitumen and minerals from tailings ponds so that they can be sold into the market place. The environmental benefits from this technology are river water conservation and reductions in carbon emissions, among others. Titanium will have its final demonstration pilot project this year. This is an example of oil sands technology collaboration among industry, government and the research community.

Gordon Lambert, VP, Sustainability, Suncor Energy, made the point that the status quo – in terms of both energy demand and its environmental footprint – is not a plausible scenario going forward. He reminded people that Canada is largest single supplier of oil to the US and is the most secure foreign sources of oil to America, the implication being this is important context for any American discussion about the oil sands.

Lambert also focused on the tailings pond issue, pointing out that Suncor just received regulatory approval for its new tailings reduction plan. This will result in \$1 billion in investment in the next two years with the aim to reduce the need for tailings ponds. Lambert also mentioned the Oil Sands Leadership Initiative (OSLI) – of which Suncor is a member – and its goal to accelerate the pace of environmental and social improvement in communities affected by the oil sands.

Keynote Address: John Podesta, CEO, Center for American Progress

Canada 2020's keynote speaker was **Mr. John Podesta, CEO of the Center for American Progress**, former Chief of Staff to President Clinton and Co-Chair of President Obama's Transition Team. Mr. Podesta is regarded as one of the most influential voices in Washington on a wide range of policy areas, especially energy and the environment.



John Podesta, Center for American Progress

Mr. Podesta delivered a very tough message on the oil sands. He stated bluntly that he is sceptical of a clean energy future for the “tar” sands.

Podesta regards the energy challenge today as unprecedented in its scope and agrees maintaining the status quo is not a possibility. He sees the United States as being at a turning point in its history with respect to fossil fuels. Mr. Podesta's stated that the United States cannot continue to rely on 19th century forms of energy, even if produced by 21st century technology.

While Podesta acknowledged that oil sands will become the major US oil source this year, he exhibited great scepticism to the notion that oil sands can ever be “greened”, at least in his sense of the term. For Podesta, greening the oil sands is analogous to “clean coal” or “error-free deep water drilling”, which he sees as more public relations than reality.

He disputed the claim from James Rajotte on the carbon premium of the oil sands versus conventional oil, arguing that the oil sands are 15-25%

more carbon intensive than conventional oil. More importantly for Mr. Podesta, any carbon increment larger than conventional oil is heading in the wrong direction.

While he conceded that oil sands exploitation has distinct, strategic advantages for the US and Canada – both economic and security – he does not view that oil sands (or any oil resource for that matter) should be a US energy priority going forward.

Mr. Podesta is also a technology sceptic when it comes to oil sands. He does not believe there is any technology on the horizon that will fundamentally improve the environmental footprint of the oil sands, especially with respect to carbon emissions. He is of the view that most of the technologies are on the drawing board – including CCS – and he is sceptical any of them will ever make a big difference.

Most fundamentally for Mr. Podesta, “greening dirty sources of energy” means little more than working at the margins at a time when he believes the US needs a paradigm shift in energy sources and consumption. He also challenged the view that the big oil companies are investing much in clean technology, claiming that the industry is making only superficial investments in clean technology – 1.7% of gross revenue among the major oil companies was the figure he cited.

Mr. Podesta hopes 2010 will mark the year when the US begins to turn away from oil and when policy begins to catch up with climate science. He clearly wants to see both legislation and regulation that “shapes the energy market” toward a low carbon future. He warned that the administration has the legal power to regulate fuel through the Environmental Protection Agency and will do so if strong legislation does not pass Congress. Mr. Podesta believes a low carbon fuel standard will likely be set federally and that this might follow the California model. Mr. Podesta suggested that the role of unconventional oil will have to be altered to be economically and environmentally viable, and he suggested that cellulose blending might be the answer. He urged industry to plan for these “policy inevitabilities” and seek opportunities to implement them.

Mr. Podesta also questioned the speed with which the Keystone Pipeline was being approved and suggested it puts at risk highly sensitive environmental areas. In his view, a hasty approval of the pipeline would under-cut the administration’s move to a cleaner energy economy. He made a plea for the US and Canada to co-operate in building a clean energy future and working jointly to put in place clean energy sources that will not risk “environmental catastrophe”.

Podesta’s basic conclusion is that now is the time to begin a paradigm shift away from all fossil fuels and move with haste toward a post-carbon economy. And to achieve that goal, he believes governments should invest and put in place policy and regulations toward a clean energy future, which, in his view, does not include oil of any kind. Greening the oil sands, or getting oil sands production equal in its environmental impact to light crude, is a fine goal for companies, but for Mr. Podesta it is the wrong strategic goal for governments.

Panel 2 – The Big Picture –Public Opinion, Politics, Policy

The final panel of the day explored public opinion, policy and politics of the oil sands, mainly in the US context.

Janet Peace, Vice President of Markets and Business Strategy, Pew Centre on Global Climate Change, pointed out that the goal of Pew is mandatory climate change legislation in the US and globally. She believes there has been significant progress toward this goal since 2009. She cited as examples, the Waxman-Markey bill which passed the House of Representatives, the EPA signalling its willingness to take regulatory action, and the Kerry-Lieberman bill tabled in May. Ms. Peace conceded the political environment remains difficult in the US because much of the public does not recognize the urgency of climate change. She also suggested that cap and trade regimes – i.e. market based approaches to reducing GhGs – are a harder sell in the wake of the financial crisis because the public's trust of markets has eroded. She also conceded that getting carbon reduction to the forefront of the national debate is more difficult now with Washington and Americans focused on the economy, healthcare and wars.

Ms. Peace recounted how low-carbon fuel standards are being considered in many states and that states might become more aggressive on this front in the absence of federal legislation. Ms. Peace claimed that oil sands are part of the public discussion in the United States but the oil sands are not looked upon favourably by most Americans. Ms. Peace conceded there is energy and national security benefits with oil sands, but she believes the energy security benefits are over-blown – she is not convinced the scale of the oil sands resource is as advertised.



Bruce Anderson, Samantha Gross, Greg Stringham, Janet Peace, and Don Newman

Bruce Anderson, Senior Consulting Associate, Harris Decima, presented some basic conclusions from public opinion research on the environment he has conducted over more than two decades in Canada and the US. His research shows that the public are looking for pragmatic and moderate solutions to environmental problems and want to see directional progress rather than radical change. This includes a desire to see environmental groups taking more practical stances while also working with the business community.

In the 1980s environmental issues were seen more through a local lens, whereas today, they are considered more about the planet due to what people see as unprecedented pressures on the planet. Anderson's data also suggest people are taking more personal

responsibility for environmental degradation today, whereas twenty years ago they tended more towards blaming industry.

His research in the US suggests that Americans are not that aware of the energy relationship with Canada, Alberta is not well-known or understood, and Americans have little more than a vague sense that Alberta has oil and gas deposits. Most Americans are not aware of the controversy surrounding the oil sands.

Overall Americans tend to think Canada has a clean environment, including in Alberta. Recent research suggests Americans are becoming determined to reduce their dependence on oil – Anderson believes this is not a transitory trend but rather a cultural phenomenon that probably cannot be stopped.

Greg Stringham, Vice President, Markets and Oil Sands, Canadian Association of Petroleum Producers (CAPP), pointed out that Canada is the largest source of US energy today, but this relationship cannot be taken for granted on either side of the border. The petroleum industry understands global energy demand will require growth in all sources of energy, including petroleum. Mr. Stringham argued that Canada is poised to fill the oil “void” of producer’s with diminishing supply. Echoing James Rajotte, Mr. Stringham also argued environmental performance in the oil sands should be considered on the basis of carbon lifecycle. And he pointed out that industry needs to continuously improve its environmental performance and educate Canadians and Americans about the strides being made in this regard.

Samantha Gross, IHS Cambridge Energy Research Associates Director, stated that oil sands are central to US energy supply today and are a microcosm of the energy industry. In an attempt to clarify some of the debate around oil sands carbon emissions relative to those of conventional oil, Ms. Gross believes oil sands production emits 5-15% more than the average amount of oil produced/refined in the US today.

In Ms. Gross’s view, CCS and improvements in production efficiency are the principal means by which the oil sands can reduce emissions further. She acknowledged that the oil sands produce a lot of waste and improving tailings ponds is critical to reducing the environmental footprint of the oil sands. Ms. Gross also echoed earlier comments to the effect that oil sands are a technology intensive process and continuous research is making extraction and processing of the resource even more technologically intense and greener.



Audience members at the Greening the Oil Sands Symposium in Washington, DC.

Conclusion: Moving Beyond the Current Debate

There are several basic conclusions and recommendations that emerged from the “Greening the Oil Sands: Debunking the Myths and Confronting the Realities” symposium held on June 22nd, 2010 in Washington, DC.

1. **First**, there have been significant reductions in the environmental footprint of the oil sands over the last twenty years, especially with respect to GhG emissions, water usage, and the mitigation of tailings ponds. Notwithstanding these positive developments and prospects, there remains a substantial and influential constituency in Washington that is sceptical of the oil sands. There is also disagreement over a neutral fact-base about the oil sands – for example, its GhG intensity.
2. **Second**, these improvements have not been achieved via regulation or policy, but rather largely through research, innovation, technology development and technology deployment throughout the oil sands. This research and technology development/deployment has been, and continues to be, the result of fruitful collaborative work between governments, industry and business, which should be continued and strengthened, where possible. Going forward, for example, there are exciting and promising research, innovation and technology deployment in CCS and steam assisted gravity drainage (SAGD). There is much hope that these and other technologies will further reduce the environmental effects of oil sands development.
3. **Third**, the perception that security of energy supply (considered a major competitive advantage of Canada’s oil sands) trumps environmental concerns in Washington (particularly in the wake of the Gulf of Mexico oil leak) is now overstated, especially within the current Democratic administration and congressional composition.
4. **Fourth**, the broader national and Canada-US conversation launched at this event needs to continue and address both the advances and ongoing reputational and other challenges of further developing the oil sands. **Additional events in other US cities, as well as London (UK), Brussels, and Oslo would be opportunities for Canada to tell the clean tech story to important audiences around the world, so that foreign policy makers and opinion leaders better understand the positive impact that science, technology and cleantech are having on the oil sands.** This dialogue should inform a Canadian policy strategy that ensures that the oil sands benefit the Canadian economy to the maximum extent possible in an environmentally responsible manner.

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